Dell September 2001

Math Puzzles AND Logic Problems

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LETTER FROM THE EDITORS

As you might guess, writing the Letter From the Editors is customarily the last editorial task on our list, since we need to finalize what's on these pages before composing our introduction that discusses the many favorites ahead. This time around, however, we had a wee problem with our data sorter while preparing the Table of Contents: All the puzzle titles and page numbers got jumbled together. Since the bulk of the issue had already been sent to the printer, we had to resort to some creative deduction to come up with a correct list of the puzzles now before you. Mathematical optimists that we are, though, we happily deciphered the whole mix! In honor of serendipitous misfortune, then, we've decided to share with you as much of the whole scrambled bunch as would fit in this column for your enjoyment. In the excerpt of our erroneous Table of Contents at right, all the puzzle names are scrambled and the only page listed is 33 (our sorter's favorite number, it seems!). Not to fear — we discovered a method to this madness: Each scrambled name is a combination of two puzzle titles that appear on two different pages in this issue. When added together, the correct page numbers for these puzzles total 33. (No page is listed more than once.) As an example, you'll find Letter from the Sums 11 & 12 and Cross Editors in the list. You can deduce that the correct titles are Letter from the Editors and Cross Sums 11 & 12. Since this column is on 4, and 33 minus 4 is 29, Cross Sums 11 & 12 are on page 29. We can also tell you that:

1. A Number Fill-In puzzle is on 6 and a Collector's Series ad (which you can use to purchase favorites like Number Place) is on 23.
2. Logic Problem 2, which is five pages away from the one with Figure Logics 2 & 3, comes after Figure Logic 1.
3. The Cross Sums in this issue appear in groups of four on two consecutive pages
4. The Word Arithmetic pages in this issue are ten pages apart.
5. Logic Problems 6 & 7 are the only ones on the list on consecutive pages.

Using this inside info and your knowledge of the regular features in every issue (which include 10 Figure Logics, 15 Logic Problems, 45 Word Arithmetics, 2 Bingo Plays, and 20 Cross Sums), and knowing that puzzles are numbered in ascending page order, can you determine the correct puzzle titles and page numbers in the list below? If you need a hint, the answers are just a page away on 3, where you'll find the REAL Table of Contents!

(*Correct titles and solution explanation is on 64.*)

All Sums 9 & 10 33
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the Editors

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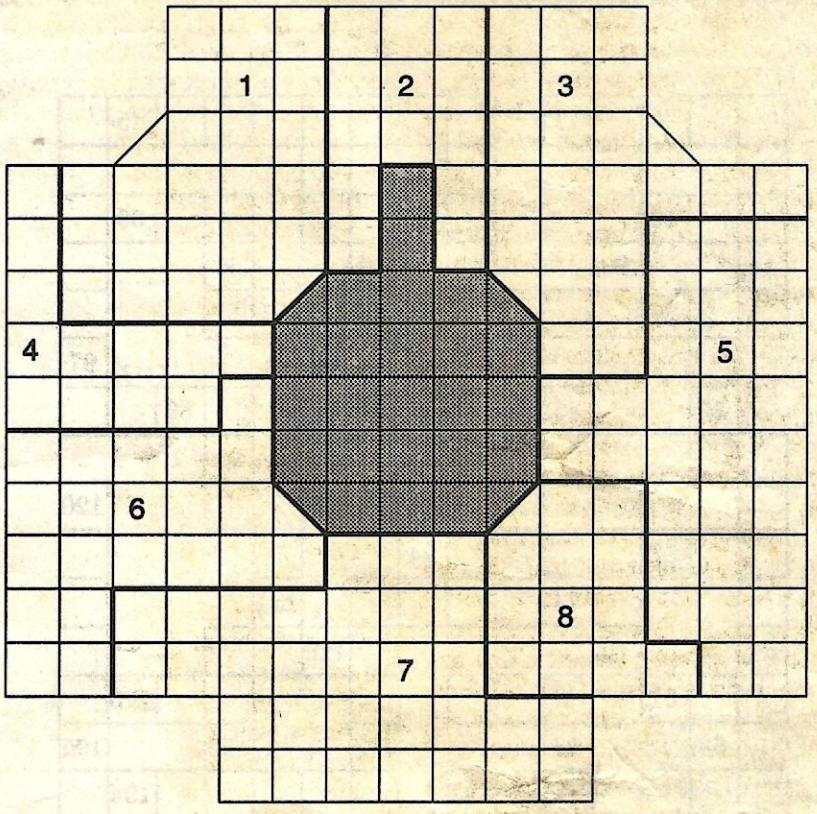
HALF TIME

The diagram below has been broken up into eight numbered areas separated by heavy lines. Which numbered areas would have to be pencilled in so that the whole diagram will be half white and half gray? Any two half-squares can be counted as one square.

Answer is on page 65.



ALL IN A ROW

Which row below contains the most groups of consecutive numbers adding up to 21? Look carefully, because some groups may overlap. We've underlined an example of a group in each row to start you off.

Answer is on page 65.

A. 5 5 5 2 6 9 <u>1 6 4 3 7</u> 1 3 3 2 9 4 8 1 5 8 1 2 4 2 7 7 7 5 5

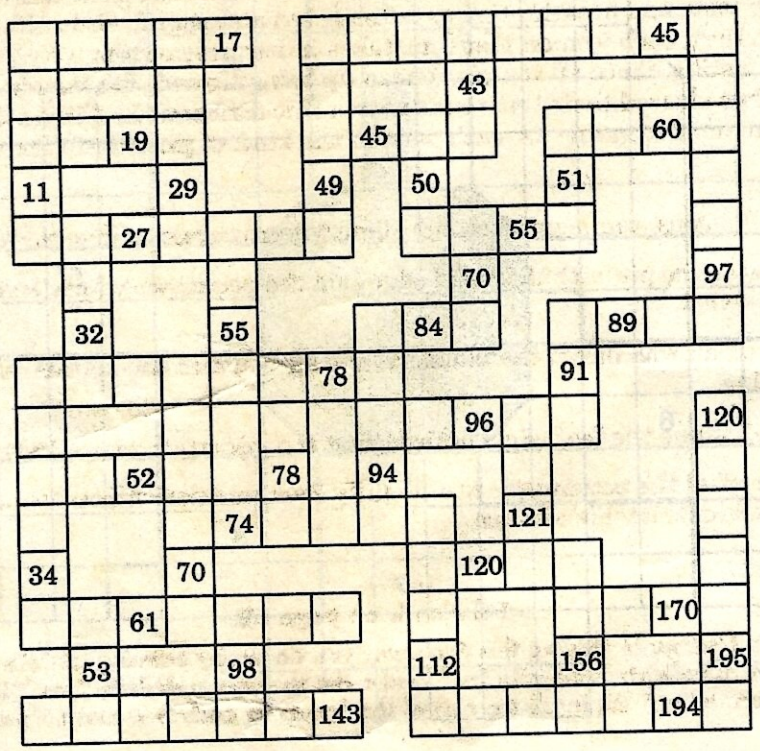
B. 6 4 9 4 8 4 8 2 <u>1 5 9 5 1</u> 6 3 2 5 9 5 3 3 3 8 4 2 6 6 3 1 9

C. 8 7 2 <u>3 8 1 9</u> 6 5 9 6 1 1 2 3 4 5 8 9 7 1 4 2 2 2 2 2 2 2 1

NUMBER FILL-IN

In this puzzle, the numbers to be entered into each row across and each column down will form a numerical sequence with the numbers already in the diagram. For example, if you saw the numbers 5, ?, 15 already in the puzzle, you could figure out that the missing number is 10, and the sequence involves adding 5 to each number to get the next number. The sequences always increase from LEFT to RIGHT and from TOP to BOTTOM. See if you can figure out each sequence and fill in all the missing numbers.

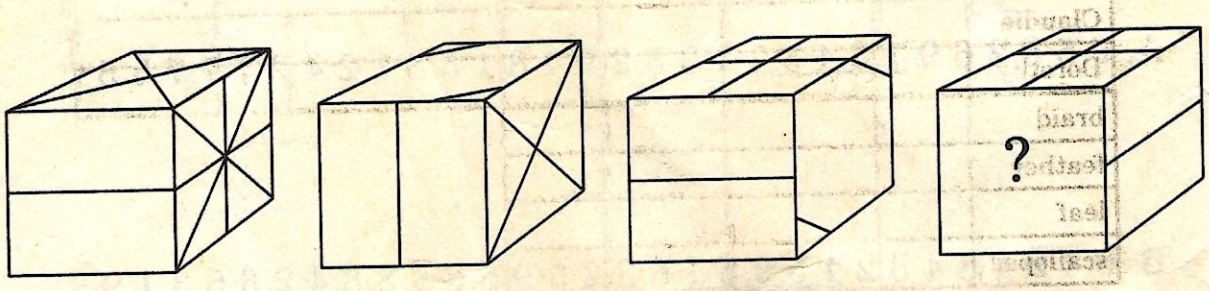
Solution is on page 61.



BLOCK ASSOCIATION

Study the four different views of the same cube below, and draw what should appear on the side that has a question mark.

Solution is on page 60.



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The **Dell Collector's Series** is now available only by mail.
Each 64-page book is packed with just one kind of puzzle!

For ordering information, turn to page 23.

LOGIC PROBLEM 1

HUMBLE PIE

by Mary Marks Cezus

Abigail and three of her pals, all graduates of Le Fantastique School of Pastry Design, meet regularly to share good food and discuss their careers as professional pastry chefs. After years of playful debate over who's "the crème de la cream pie," the four friends decided to settle the matter once and for all by holding a bake-off, in which each woman prepared a different kind of pie. All the women were pros, so they livened up the competition by having not only taste and presentation as criteria, but also speed, with a 20-minute limit on prep time. In their haste to finish first, each woman made mistakes in her preparation which were noticed by her fellow chefs during the final tasting. Since all the pies ended up being flawed, the friends had a good laugh over the inconclusive contest, then cleared their taste buds with a fine dinner at Le Circus. From this information and the following clues, can you determine for each woman the kind of pie baked (one was apple) and crust-edge design used?

1. Both Claudia and Beatrice commented on the slightly burnt crust on the pie with the scalloped edge.
2. The woman who made the pie with the braid edge said the pecan pie (which wasn't made by Dorothy) was just a little bit too sweet.
3. Claudia and the woman who baked the blueberry pie agreed that the feather edge on one of the pies was rather sloppy looking.
4. Beatrice (who didn't make the leaf edge) noticed that the pecan pie was a little syrupy.
5. Claudia commented that the coconut pie was slightly sour, and the woman who created the leaf-edged pie mentioned that the blueberry pie was too.

Solution is on page 62.

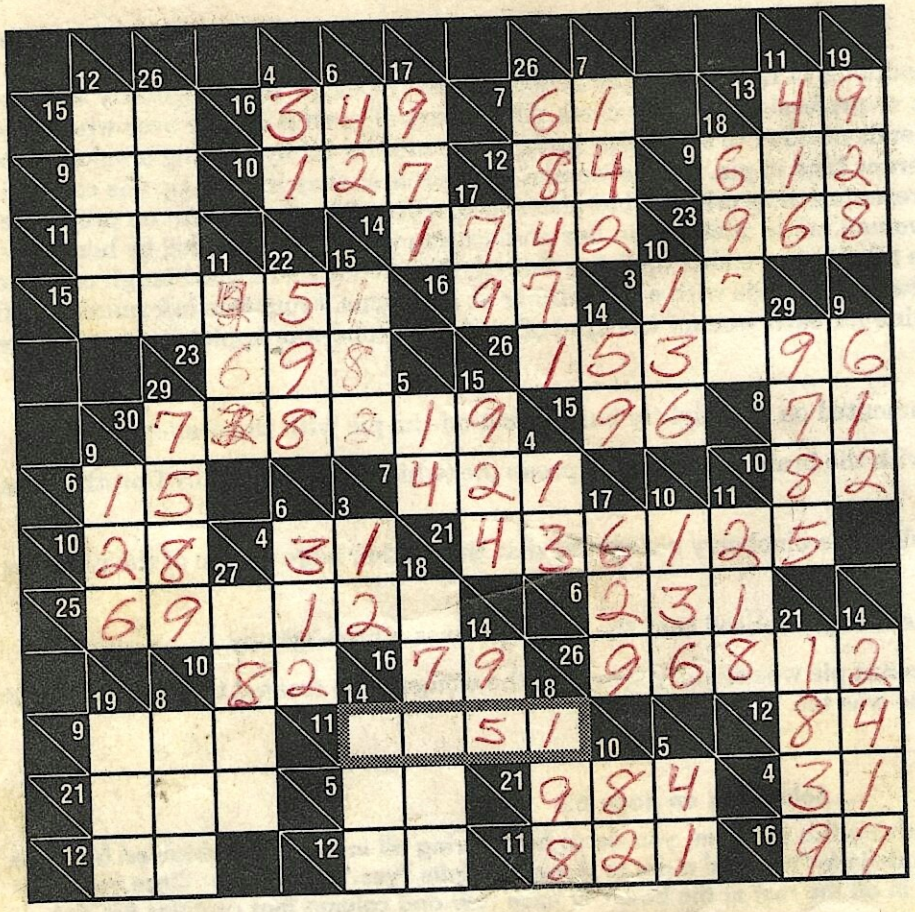
If you care to use the chart below in solving this Problem, you do so by entering all information obtained from the clues using, perhaps, an X to indicate a definite "no" and a dot to show a definite "yes." Remember: Once you enter a definite "yes" (dot), place a "no" (X) in all the rest of the boxes in each row and column that contains the dot.

	apple	blueberry	coconut	pecan	braid	feather	leaf	scalloped
Abigail								
Beatrice								
Claudia								
Dorothy								
braid								
feather								
leaf								
scalloped								

If you wish to learn more about the use of Logic Problem charts and how they can assist you, send for a free leaflet of easy-to-follow instructions, "Solving Logic Problems, Step by Step." Mail to Dell Math Puzzles and Logic Problems, Dept. L.P., Dell Magazines Direct, 6 Prowitt St., Norwalk, CT 06855-1220. Please enclose a stamped, self-addressed envelope (long-letter size, if possible, please).

CROSS SUMS

1.

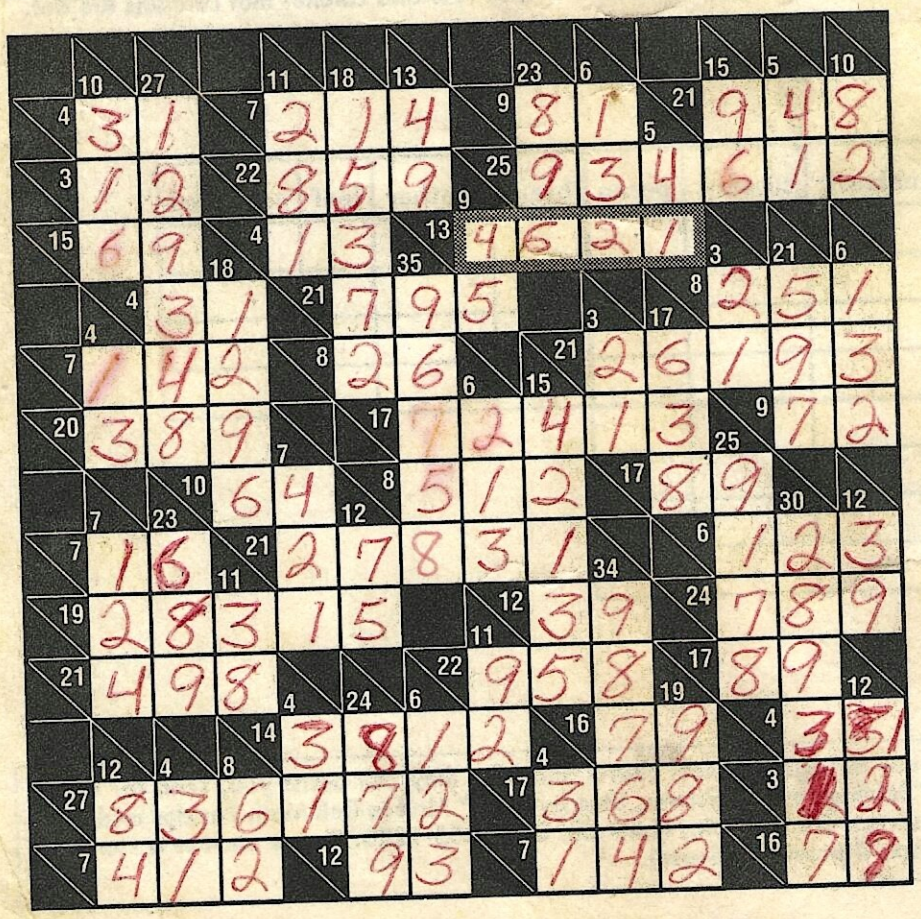


The numbers in the black squares in these puzzles refer to the sums of the digits to be filled into the empty spaces. The number below a diagonal line is the sum of the numbers below it. The number above a diagonal line is the sum of the numbers to the right of it. Place one digit (1 to 9, no zeros) in each square.

IMPORTANT: No digit is used more than once in any particular digit combination. We have outlined one area in each diagram on these two pages. If you need help starting a puzzle, the digit combination for that area is listed on page 66.

Solutions are on page 59.

2.



Add more to your total puzzle enjoyment with ***Collector's Series Cross Sums.*** *You'll find over 100 of your favorites. To order, see page 23.*

CROSS SUMS

Solutions are on page 59.

I prefer Marvelous Mindy!

I ♡ LONG ÷

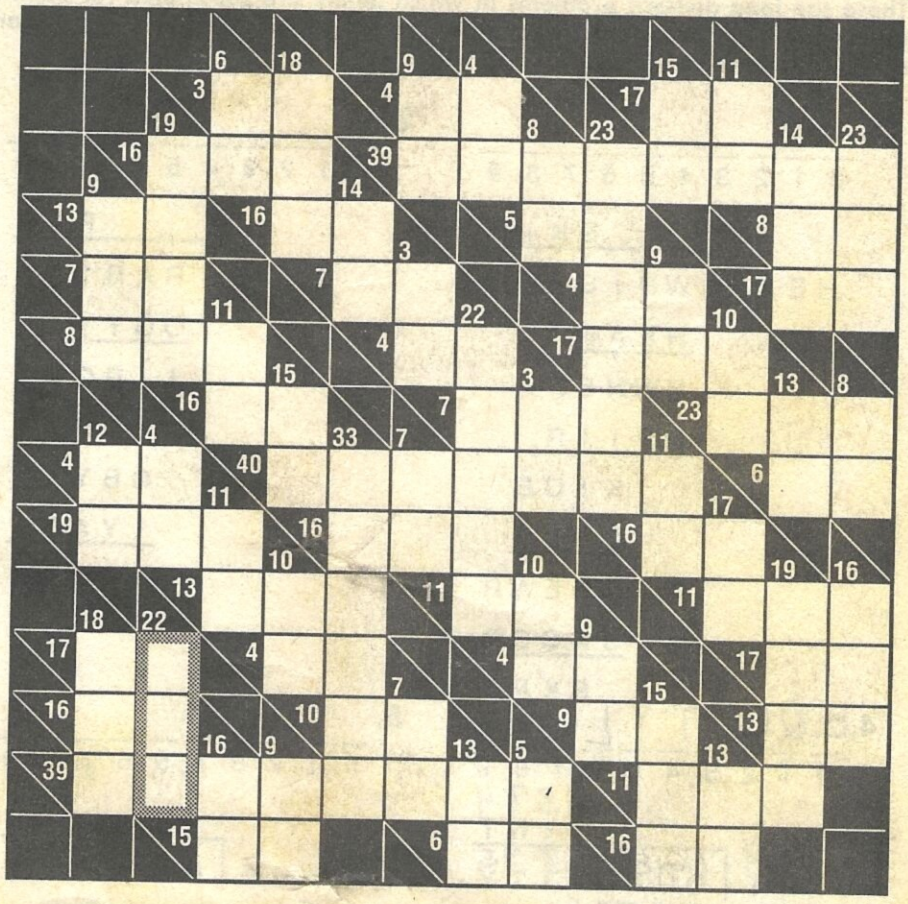
135 / 51

315 / 7

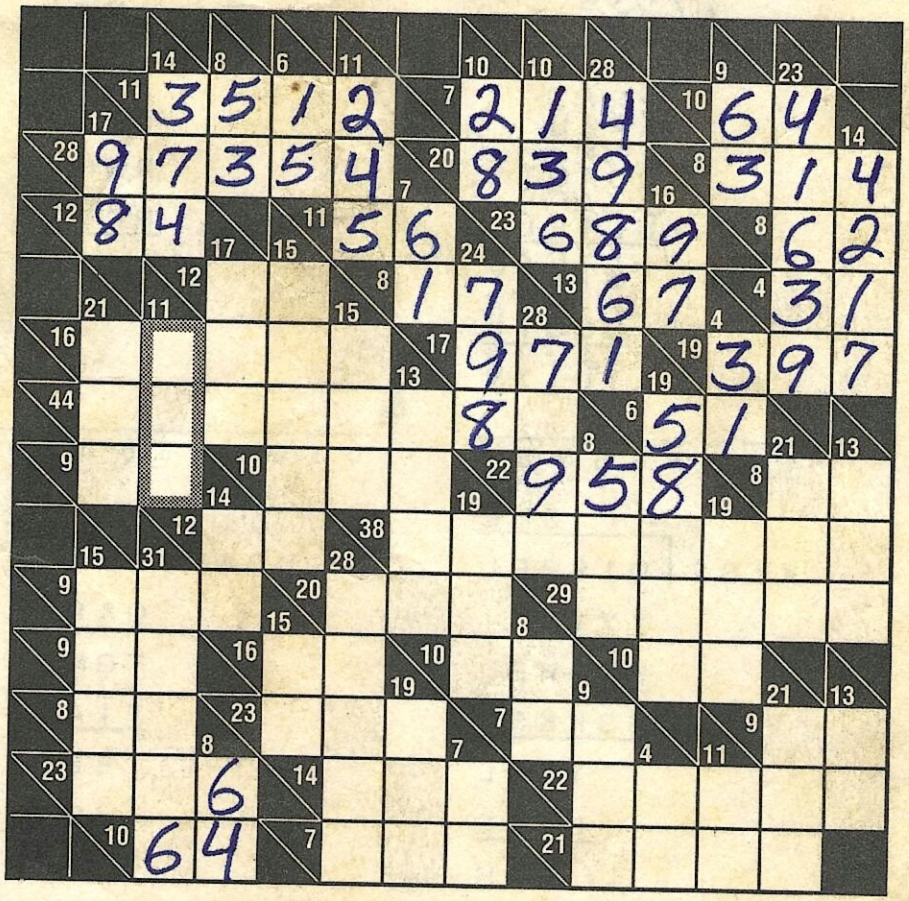
53 / 5

351 / 9735 / 84

3.



4.



ARE CROSS SUMS MAKING YOU CROSS?

Our free how-to leaflet, "Aids in Solving Cross Sums Puzzles," may help!

This step-by-step instruction booklet explains the procedure to follow in solving Cross Sums puzzles. Send a stamped, self-addressed envelope (long-letter size, if possible, please) to:

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Who's a cute little kid?

WORD ARITHMETIC

These are long-division problems in which letters are substituted for numbers. Solve the problem; determine the number value of each letter; and, when the letters in each one have been arranged in order from 0 to 9, they will spell out a word or words.

Answers are on page 66.

1.

0 1 2 3 4 5 6 7 8 9

```
          SKIP
HEAP | WHISPER
       HEAP
       HWHEP
       HPIIR
          KICE
          CSSH
          SHEWR
          SACSR
             SKPA
```

2.

0 1 2 3 4 5 6 7 8 9

```
          FAR
GAFF | RARITY
       OGYY
       IIRGT
         YOFG
         GBYAY
         IYATA
           IARC
```

3.

0 1 2 3 4 5 6 7 8 9

```
          OAT
IOTA | CREATE
       IOTA
       OPRBT
       OAAIP
         AATSE
         OETSI
           PBBA
```

4.

EQUITYLOAN

0 1 2 3 4 5 6 7 8 9

```
                4394
             TINT
2934 | 12894345
UNIT | QUANTITY
       11736
       QQOIL
       11583
       QQYAI
         8802
         AAEU
        27814
        UOAQT
        26406
        ULTEL
         14085
          QTEAY
          11736
          QQOIL
            2349
             UITN
```

5.

0 1 2 3 4 5 6 7 8 9

```
          SUP
LASH | HARSHLY
       HLUAH
       UMAML
         LASH
         RWHPY
         RPYWR
           YAHP
```

6.

0 1 2 3 4 5 6 7 8 9

```
          DARN
RATS | REDSTART
       RNFAY
       RYRDA
       RRSFN
         YYER
         RATS
          WNYT
          WRYA
            RSN
```

7.

0 1 2 3 4 5 6 7 8 9

```
          SHE
KISS | DISPEL
       IYYY
       SSIHE
       SSKKS
         YSDL
         KISS
           CIH
```

8.

0 1 2 3 4 5 6 7 8 9

```
          ERE
GAS | STAIR
      GAS
      TGMI
      TIAI
        EECR
        GAS
         GNA
```

9.

0 1 2 3 4 5 6 7 8 9

```
          RAW
DEN | WORSE
      DEN
      EKES
      RWWO
        SAWE
        SBAE
          ASB
```

FIGURE LOGIC 1

Solve Figure Logic by completing some simple arithmetic problems, which will enable you to move from clue to clue through the puzzle. You may discover that, at times, you will not be able to complete an entire number at first, but you may be able, by logic, to determine what one or more of the digits must be. If you enter those digits into the diagram, they may help you to solve other clues, and you can eventually return to the unfinished numbers and finally complete them. NOTE: A square of a number is that number multiplied by itself. For example, the square of 6 is 36 (6 x 6 = 36).

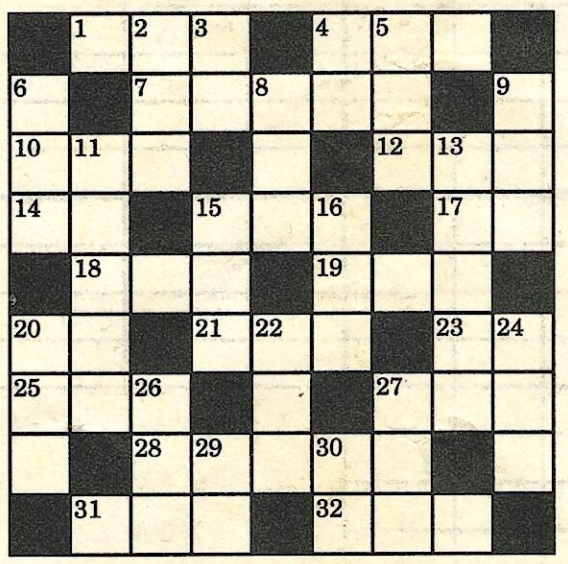
If you need help starting this puzzle, a help is on page 66.

ACROSS

1. One hundred more than 3-Down
4. 1-Across plus 23-Across
7. Square of 1-Across
10. Five more than 4-Across
12. Two more than 5-Down
14. One-sixth of 25-Across
15. Three times 17-Across
17. One-half of 19-Across
18. Three times 15-Across
19. 4-Across minus 29-Down
20. One-seventh of 4-Across
21. Nine times 14-Across
23. One-fifth of 30-Down
25. 27-Across plus 6-Down
27. Two less than 22-Down
28. 17-Across times 19-Across
31. Four times 10-Across
32. Two times 15-Across

DOWN

2. 17-Across times 23-Across
3. Nine times 23-Across
4. Two-thirds of 20-Across
5. Same digit three times
6. Two times 12-Across
8. Three times 10-Across
9. Fifty more than 17-Across
11. 2-Down times 4-Down
13. 27-Across times 3-Down
15. One more than 15-Across
16. Two times 15-Down
20. Two times 19-Across
22. 17-Across plus 3-Down
24. Square of 23-Across
26. Two times 25-Across
27. Two more than 3-Down
29. Two times 4-Down
30. 17-Across minus 20-Across



Solution is on page 60

Crazy about Figure Logic? See page 23 to order the ***Collector's Series Edition!***

LOGIC PROBLEM 2

by David Champlin

SHHH! DON'T TALK!

While digging through the huge stack of periodicals in his doctor's waiting room, film buff David discovered the farewell issue of Silent Film News, a magazine that, while in print, had reviewed the latest silent films. Though its cover story was a bitter editorial entitled "Talking Pictures: The Downfall of Artistic Cinema," the issue also included more optimistic pieces, including one profiling four silent screen idols who'd found success in the world of talkies. Though these actors hadn't been able to sustain their careers as leading men, each had nevertheless managed to stay on top in Tinseltown following a savvy career switch. In the article, each former star gave a different reason for his lack of success in talkies (one had an unfortunate tendency to speak in spoonerisms, saying, for example, "belly jeans" instead of "jelly beans"), and then described his new, rewarding career in show business. From this information and the following clues, can you determine each man's stumbling block to talkie success, his new showbiz career, and the order in which he was profiled?

1. The man who became a producer was profiled immediately before Hector Handsome, who was profiled immediately before the man who could only speak in a monotone.
2. Mark Matinee's story was told sometime before that of the man whose unpleasantly nasal voice had ruined his career as a romantic leading man, whose story was told sometime before that of the star who went on to become a successful screenwriter.
3. The four men were Sylvester Silverscreen, the one who became a director, the man whose poor diction made it impossible for the audience to understand his lines, and the third one profiled.
4. Guy Goodlooker was profiled sometime before the man who became a top theatrical agent (who wasn't Hector Handsome).

Solution is on page 62.

See page 7 for directions on how to use the solving chart.

	bad diction	monotone	nasal voice	spoon-erisms	agent	director	producer	writer	1st	2nd	3rd	4th
Guy												
Hector												
Mark												
Sylvester												
1st												
2nd												
3rd												
4th												
agent												
director												
producer												
screen-writer												

4-(6) 5 (7)

BINGO PLAYS 1

Each square on the Bingo playing card below contains 15 numbers (with the exception of the "FREE" space, which has no number in it). Follow the clues below to eliminate numbers until you are left with only one number in each square. No number will be repeated in any column. Then find your winning Bingo combination — just as in Bingo, the numbers in only one row, column, or diagonal will fit the clues given. Note: It is helpful to go back and read the clues a second time, remembering to eliminate those numbers which do not appear in the winning combination.

Solution is on page 61.

1. The number one does not appear on the card as a single-digit number, nor does it appear in row A, column N, or square PB, PO, LB, LI, YB, YO, or SO.
2. The number two does not appear in square PI, PN, LN, AO, YI, or YN.
3. The number three does not appear in row P, A, or S, column O, or square YB, YI, or YG.
4. The number four does not appear on the card as a single-digit number, nor does it appear in row A, column O, or square SG.
5. The number five does not appear in row L, square PO, AB, AI, AO, YB, YN, SB, or SI, or in the winning combination.
6. The number six does not appear on the card as a single-digit number, nor does it appear in column I or N or square LO, AG, or YG.
7. The number seven does not appear on the card as a single-digit number, nor does it appear in row Y or S, column G, square PI or LN, or in the winning combination.
8. The number eight does not appear in column G or O, or square PI, LI, AI, YB, or YN.
9. The number nine does not appear on the card as a single-digit number, nor does it appear in row S, column N, or square PG, LI, AI, AG, or YG.
10. Zero does not appear in column G or square LI, AI, or SI.
11. The number 33 is the only same-digit double-number combination on the card.
12. The number 56 is the only consecutive-digit (in either order) combination on the card.

	B	I	N	G	O
P	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40 41 42 43 44 45	46 47 48 49 50 51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70 71 72 73 74 75
L	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40 41 42 43 44 45	46 47 48 49 50 51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70 71 72 73 74 75
A	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	FREE	46 47 48 49 50 51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70 71 72 73 74 75
Y	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40 41 42 43 44 45	46 47 48 49 50 51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70 71 72 73 74 75
S	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40 41 42 43 44 45	46 47 48 49 50 51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70 71 72 73 74 75

CARD 1	B	I	N	G	O
P	5	19	40	46	72
L	3	24	38	49	71
A	8	27	X	52	70
Y	2	18	33	51	69
S	14	28	42	56	62

The winning combination is:
40 38 X 33 42

LOGIC PROBLEM 3

by Evelyn B. Rosenthal

MUSICALLY INCLINED

Four music-loving friends who perform together as a string quartet also sing together as a vocal quartet, with the two women of the group singing soprano and alto and the two men singing tenor and bass. The musicians met at school, but are each a different age. From this information and the following clues, can you determine each versatile musician's full name, string quartet position, and voice, as well as the order from youngest to oldest?

1. The two violinists are of different sexes.
2. Gomez is not the alto; Pat is not the bass.
3. Kit is younger than the cellist, who is not the oldest quartet member.
4. Chris is older than Rossov, who is older than the alto.
5. Adamson is older than the first violinist, who is older than Robin.
6. The second violinist is younger than Dawson, who is not the oldest.
7. The viola player is older than Pat, who is older than the soprano.

Solution is on page 62.

See page 7 for directions on how to use the solving chart.

	Adamson	Dawson	Gomez	Rossov	cellist	first v.	sec.v.	violist	alto	bass	soprano	tenor	youngest ◄► oldest			
Chris																
Kit																
Pat																
Robin																
youngest ▲																
▼ oldest																
alto																
bass																
soprano																
tenor																
cellist																
first v.																
second v.																
violist																

KROSS NUMBER KRISS KROSSES

Fit the number combinations supplied with each diagram into their proper places in the puzzle squares. The combinations are in numerical order according to length. If you need help getting started, the numbers that go into the outlined areas are listed on page 66.

Solutions are on page 60.

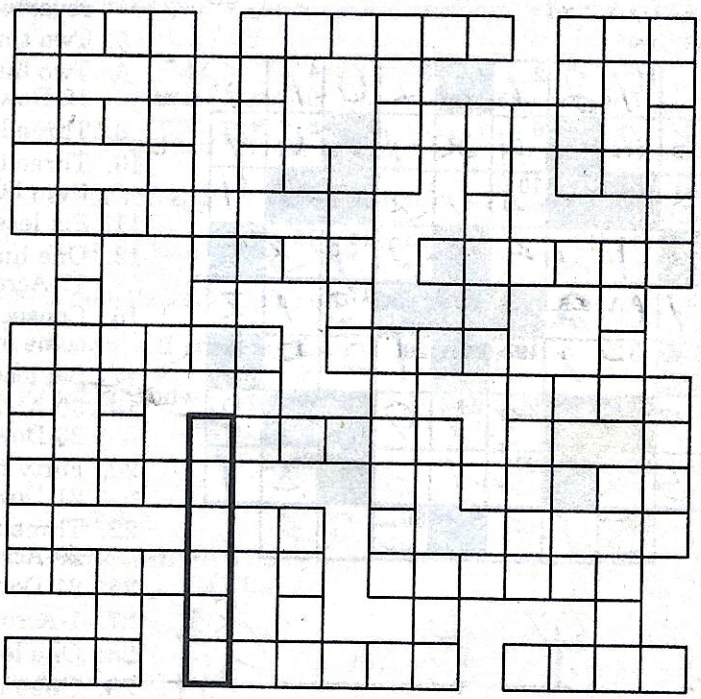
3 Digits
174
238
244
265
527
541
590
622
972

4 Digits
1254
1626
2410
3392
3446
4328
4606
4882
6029
6163
6430
6472
6732
7789
8529
9136

5 Digits
23387
25091
26976
30826
31274
33704
44416
50143
65351

6 Digits
265555
329122
414845
584677
633182
724769
822540
865345
924255
928109
957142

1.



---

3 Digits
103
104
107
172
239
267
271
329
362
454
462
465
508
597
608
664
674
826
912
998

4 Digits
2049
2978
3888
4232
4804
4991
6299
7979
8728
9328

5 Digits
13796
21169
51842
70438
71656
80969

6 Digits
167522
224079
370367
446184
482696
678759
780766
788627
892557
924296
965065
966373

2.

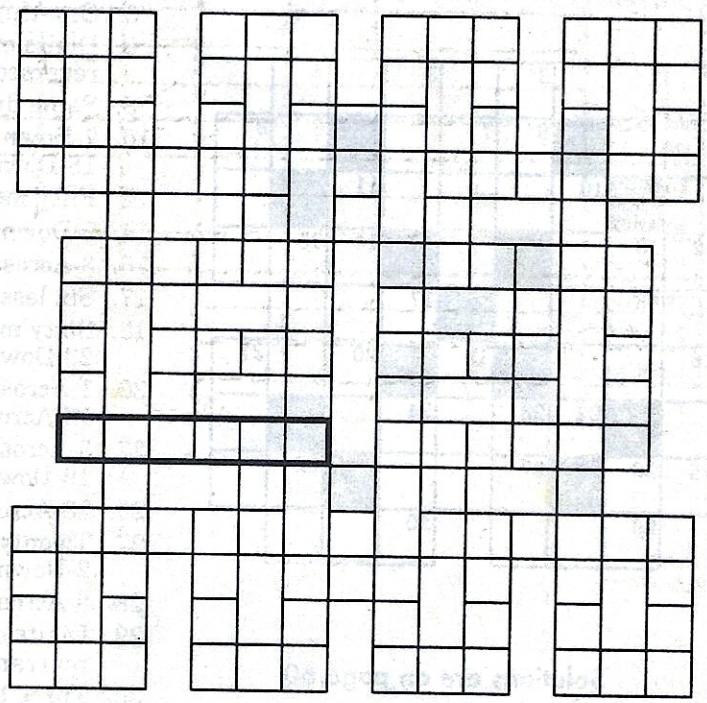
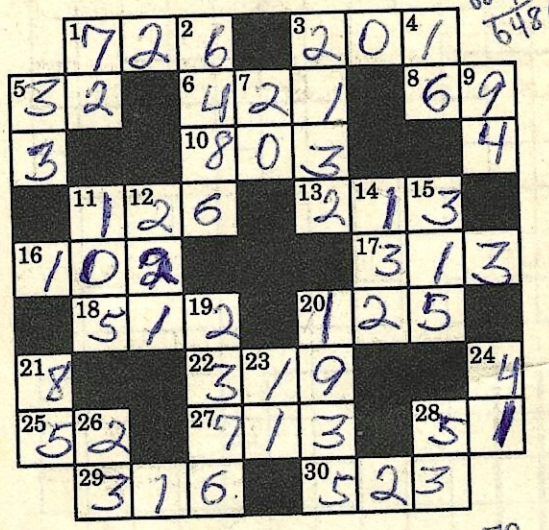


FIGURE LOGIC 2 & 3

by Linda Thistle

Directions for solving Figure Logics are on page 11.

Starting helps are on page 66.

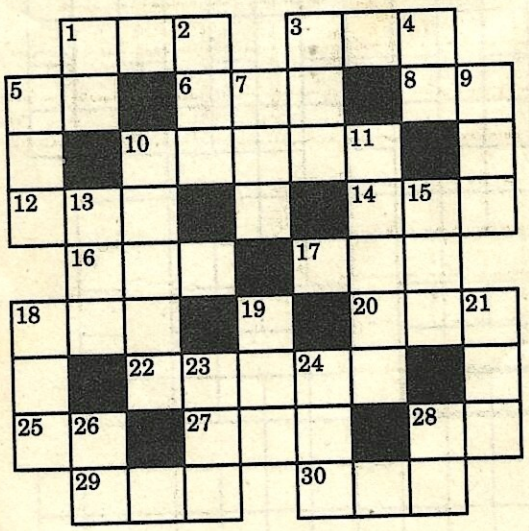


ACROSS

1. Six hundred more than 11-Across
3. Digits of 16-Across reversed
5. Two times 4-Down
6. Two hundred more than 12-Down
8. Three less than 1-Down
10. Three hundred more than 30-Across
11. Six less than 14-Down
13. One hundred less than 17-Across
16. Consecutive digits, in some order
17. Six less than 22-Across
18. 30-Across minus 23-Down
20. Forty more than 21-Down
22. Three more than 29-Across
25. 21-Down minus 5-Down
27. 1-Across minus 23-Down
28. One less than 25-Across
29. One more than 15-Down
30. 6-Across plus 16-Across

DOWN

1. Twenty more than 25-Across
2. 8-Across times 9-Down
3. 25-Across times 24-Down
4. Seven less than 26-Down
5. Three times 23-Down
7. Six more than 4-Down
9. Eight less than 16-Across
11. Twenty less than 20-Across
12. Twenty more than 3-Across
14. Four times 5-Down
15. Three times 11-Down
19. 1-Down times 5-Down
20. 21-Down times 26-Down
21. 8-Across plus 4-Down
23. 25-Across minus 24-Down
24. Nine more than 5-Across
26. One-third of 8-Across
28. 9-Down minus 24-Down



ACROSS

1. Two times 15-Down
3. Three hundred less than 18-Across
5. One-third of 28-Across
6. Digits of 30-Across reversed
8. Same digit repeated
10. 7-Down times 18-Down
12. Fifty more than 3-Down
14. 9-Down minus 12-Across
16. 3-Across plus 5-Across
17. Six less than 24-Down
18. Sixty more than 23-Down
20. 1-Across minus 16-Across
22. 3-Across times 19-Down
25. 28-Across plus 28-Down
27. Twenty more than 2-Down
28. 8-Across minus 26-Down
29. Digits of 20-Across rearranged
30. Three hundred less than 14-Across

DOWN

1. Consecutive digits in ascending order
2. Two times 18-Down
3. Eight less than 7-Down
4. 5-Across plus 25-Across
5. One more than 12-Across
7. One-fourth of 21-Down
9. Digits of 15-Down rearranged
10. 16-Across times 30-Across
11. 17-Across times 5-Down
13. Two less than 2-Down
15. Thirty more than 3-Across
18. 18-Across minus 28-Down
19. Sixty more than 16-Across
21. 16-Across plus 23-Down
23. 29-Across minus 3-Down
24. One hundred more than 16-Across
26. One more than 1-Down
28. Digits of 5-Across reversed

Solutions are on page 60

LOGIC PROBLEM 4

SPICE GIRL

by Jean Upshall

After a long day of mixing and measuring, beginning cook Carla was finally ready to add the last spice to her spice cake batter. To her horror, she realized that she had forgotten to purchase this essential ingredient on her previous shopping trip! Desperate, Carla went next door and asked her neighbor, elderly Mrs. Brown, whether she had some to spare. "Of course, dear," said Mrs. Brown, "but does your recipe call for just a pinch of this?" she asked. "Why, yes!" replied Carla. "Well," Mrs. Brown advised, "put in a teaspoon instead, dear; it'll give a lovely, robust flavor." Carla promised to do (and did) as her more experienced friend suggested, but didn't mention that she had already changed the amounts of the four other spices in the recipe. From this information and the clues below, can you determine each spice's recipe amount and amount actually used, as well as the order in which all five were added?

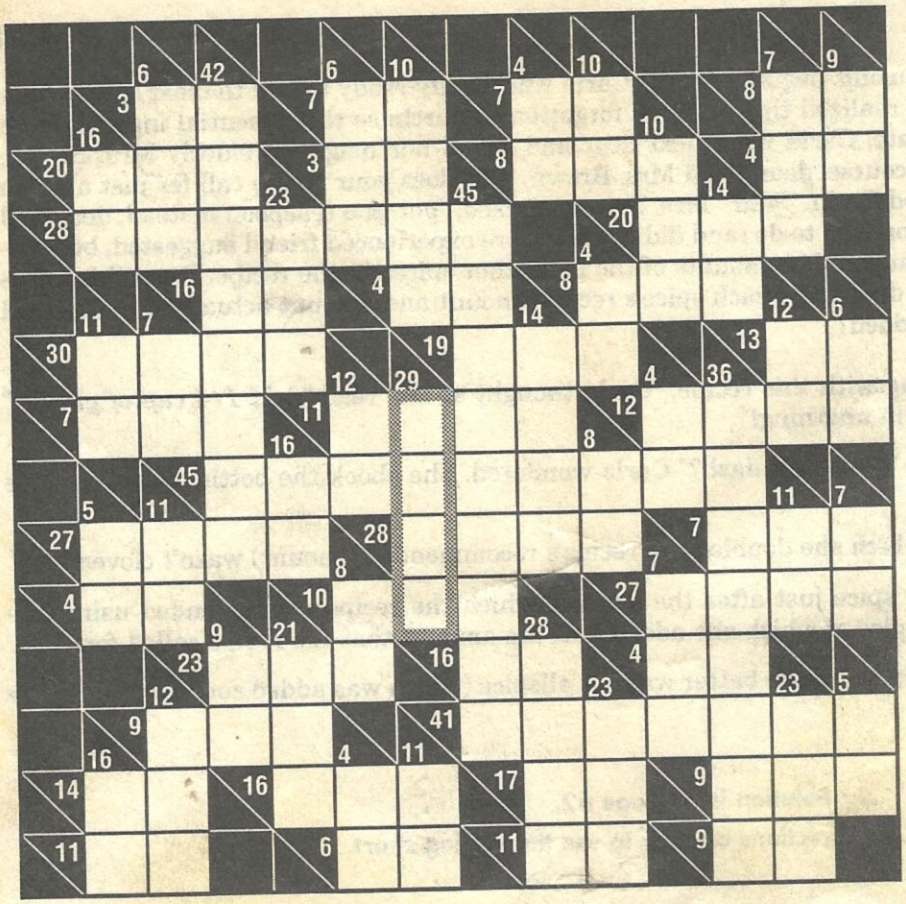
1. "There must be something wrong with this recipe," Carla thought as she read "*Add 1/4 cup of ginger.*" "I'd never put that much ginger in anything!"
2. "A dash of nutmeg? What in the world is a dash?" Carla wondered. She shook the bottle of nutmeg five times, thus adding five dashes.
3. The first spice Carla used (for which she doubled the recipe's recommended amount) wasn't cloves.
4. Carla added two teaspoons of a spice just after the spice of which the recipe recommended using one tablespoon, and just before the spice of which she added half the amount that the recipe called for.
5. The 1/2 teaspoon of spice Carla added to the batter was not allspice (which was added sometime after the cinnamon).

Solution is on page 62.

See page 7 for directions on how to use the solving chart.

	recipe amount					actual amount					1st	2nd	3rd	4th	5th
allspice															
cinnamon															
cloves															
ginger															
nutmeg															
1st															
2nd															
3rd															
4th															
5th															
actual amount															

CROSS SUMS

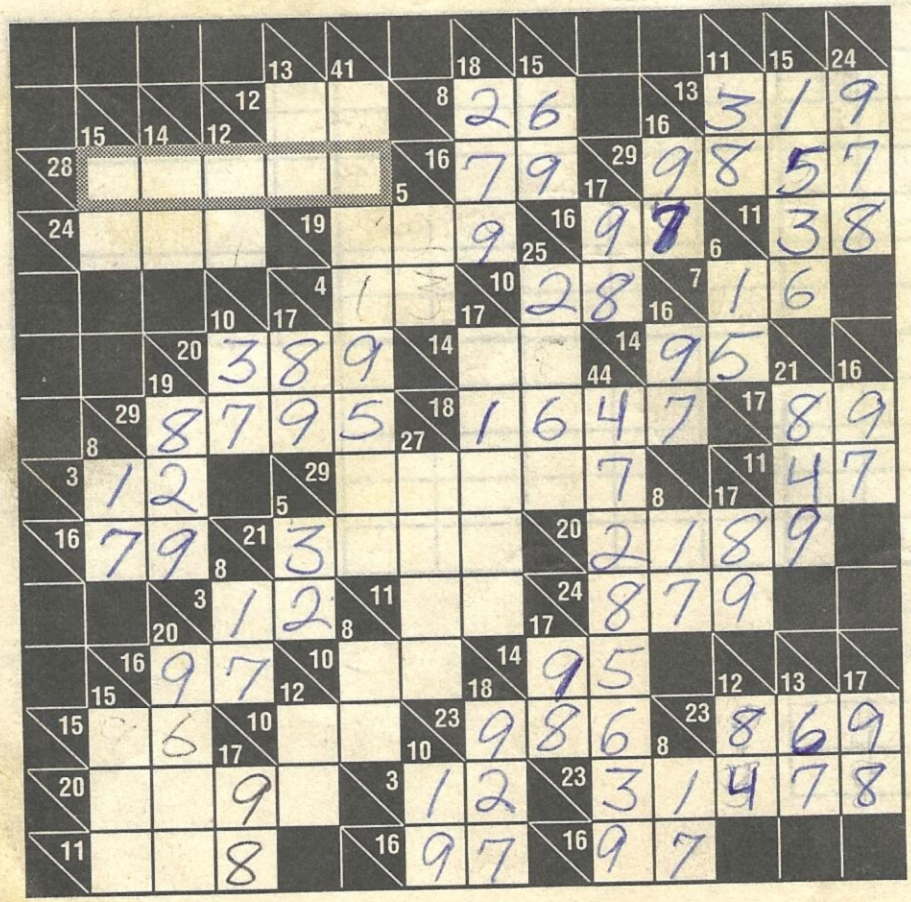


5.

We have outlined one area in each diagram on these two pages. If you need help starting a puzzle, the digit combination to go into that area is listed on page 66.

Solutions are on page 59.

Directions for solving are on page 8.



6.

My favorite Indians are Cleveland!

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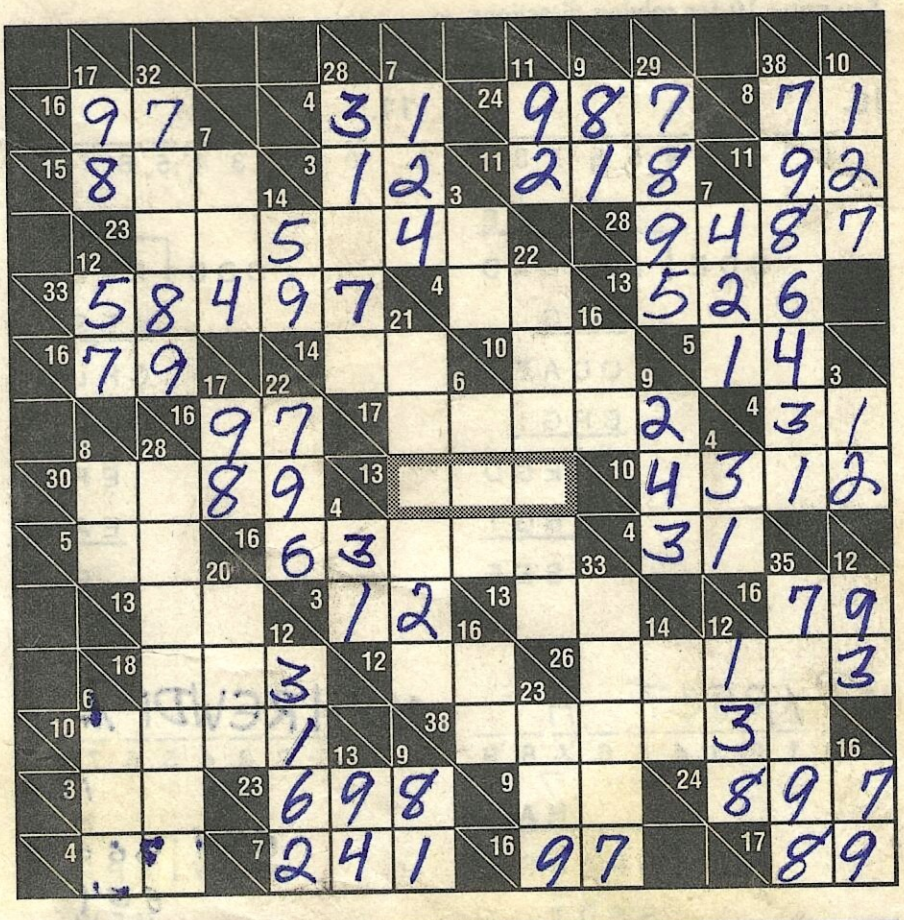
CROSS SUMS

Solutions are on page 59.

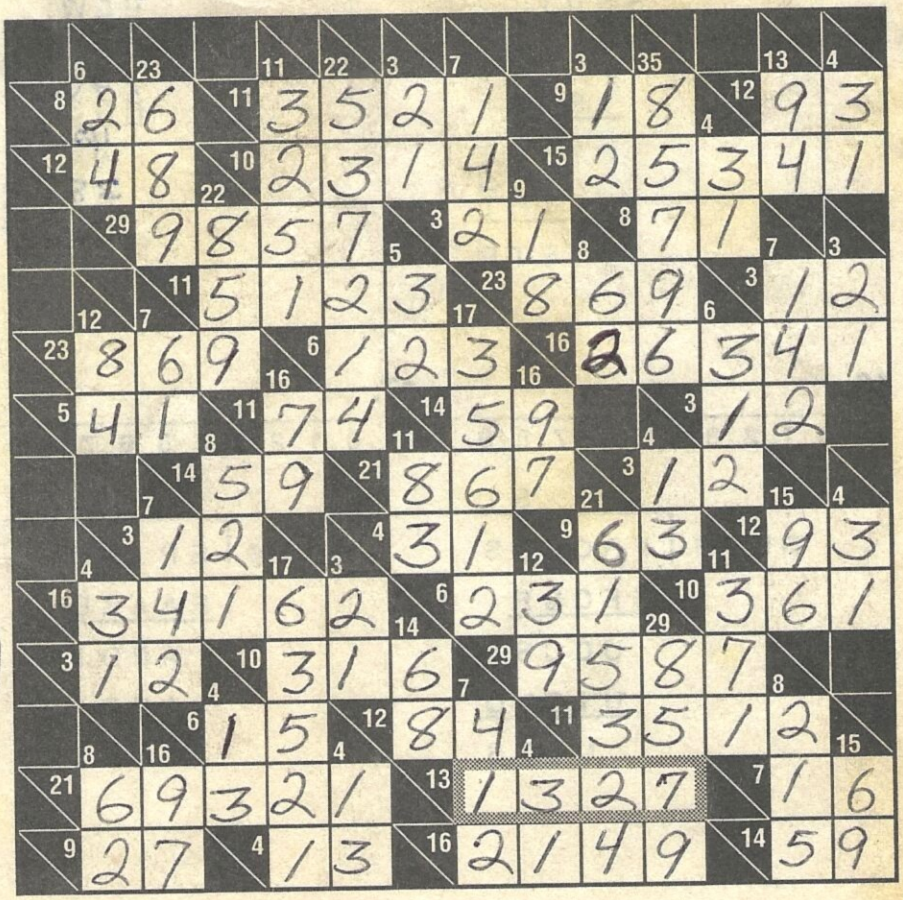
7.

Quarter, quarter, quarter!
Is that 3 quarters-worth



8.

Philadelphia Flyers
Morgan White (7)
Tabitha Yim (8)
Tasha Schwikert (9)
Natalie Foley (10)
Mohini Bandhoj (11)
Marie Fjordholm ~~(12)~~
Ashley Miles
Katie Holmes (13)
Rachel Field (14)



WORD ARITHMETIC

See page 10 for solving directions.

Answers are on page 66.

10.

0 1 2 3 4 5 6 7 8 9

```
        SEE
  ODE | ISSUED
      GIG
      ODAE
      CRGI
       CEGD
      CRGI
        SEE
```

11.

0 1 2 3 4 5 6 7 8 9

```
        CAD
  ODD | FALSE
      AES
      CHLS
      CNLD
       EFDE
      EAAD
        EAH
```

12.

0 1 2 3 4 5 6 7 8 9

```
        HUN
  GUS | HAUNTS
      XNGE
       USNT
      AINE
       NETS
      ISTE
        SES
```

13.

0 1 2 3 4 5 6 7 8 9

```
        HAT
  PIT | SPARSE
      SSDT
       IAAS
      ISCD
       IESE
       ITHT
        STP
```

14.

0 1 2 3 4 5 6 7 8 9

```
        HEP
  PEW | APPLE
      PEW
      RERL
      HNSR
       WRDE
       EASW
        WWN
```

15.

0 1 2 3 4 5 6 7 8 9

```
        BE
  TIES | APPEAR
      VEUUV
       VRURR
      VRERA
        RSB
```

16.

0 1 2 3 4 5 6 7 8 9

```
        SI
  RUFF | FROCKS
      FFCSF
       UCCSS
      UICUQ
        UQGS
```

17.

0 1 2 3 4 5 6 7 8 9

```
        APT
  DEEM | EPITOME
      EAAKU
       APDIM
      APPID
        ATKE
```

18.

0 1 2 3 4 5 6 7 8 9

```
        SAT
  SLAT | LOCALS
      AIUC
       UAIUL
      UISOA
       SMIUS
      UOAYY
        UTUI
```

LOGIC PROBLEM 5

THE DOCTOR IS IN

by Julie Spence

During the first week of classes at the University of Mathematics and Logic, Professor Liss called each of the six new Ph.D. candidates she advised to set up a friendly 30-minute initial meeting. Each student (including John) was eager to meet with Dr. Liss and agreed to come in early the following week on Monday, Tuesday, or Wednesday. Dr. Liss taught classes during the afternoon, so she proposed six possible morning times: 9:00, 9:30, 10:00, 10:30, 11:00, and 11:30. Each graduate student ended up choosing a different meeting time, and Dr. Liss met with at least one student each day. From this information and the following clues, can you determine each student's full name (one's surname is Brickston), meeting day, and meeting time?

1. Johnson met with Dr. Liss the day after Sue did.
2. Bob's meeting was one hour earlier than Nichols's on the same day.
3. Mary's meeting was one hour later than one of the Monday meetings and one hour earlier than Wilson's.
4. Truman's and Carl's meetings were scheduled for the same day, one hour apart.
5. The 10:00 meeting and Pam's were on the same day.
6. No male student (one of whom is Carlson) had a Wednesday time.
7. The 9:30 meeting was the only one scheduled on Tuesday.

Solution is on page 62.

See page 7 for directions on how to use the solving chart. NOTE: Since the six meetings were scheduled over three days, you will not be able to enter a definite "no" in the boxes of each row and column once you enter a definite "yes."

	Brickston	Carlson	Johnson	Nichols	Truman	Wilson	Mon.	Tue.	Wed.	9:00	9:30	10:00	10:30	11:00	11:30
Bob															
Carl															
John															
Mary															
Pam															
Sue															
9:00															
9:30															
10:00															
10:30															
11:00															
11:30															
Mon.															
Tue.															
Wed.															

NUMBER PLACE

In these puzzles, your job is to place a number into each box so that each row across, each column down, and each small 9-box square within the larger square (there are 9 of these) will contain each number 1 through 9. Remember that no number may appear more than once in any row, column, or 9-box square; this will help you solve the puzzle.

Solutions are on page 60.

1.

	7	8	2					3
	9				3	5	8	
5			6	9		7		
1		3		6	7		4	
	4	6	8			2		9
8				2		6	7	
9		5			6			2
3			5				6	7
	6			3	2	9		

2.

2		6		1	4		8	
	3		2	8		4		6
	9	8	5				2	3
5		9		4			1	2
1				6	2	5	4	
	2	4	1		5	9		
		2		5	3	6		4
3	4		6			8		5
6	8		4		7		3	

3.

5	8		7	1				6
		6		4	3	2		1
2	3				6	7	5	
6			3	9			7	2
7		3	6			8	9	
	2	9		7	5	6		
4	9				7		6	8
	5	8	2		9	3		
		7	8	5			2	9

4.

	8				5	4	7	
	5		8		2			6
1		2		4			9	
	6	3			1		5	
5			9	7		8		
		9		3		6		1
3			7				6	4
2		7	4			1		
	4			5	9			7

5.

6	8			1			7	
7			8			5	2	
		9	5		3			6
	6			2		3		8
	9			6	5			7
1		7	3				4	
	1		7		9		3	
		2			4	9		1
9		8		3		7		

6.

	2		1	5		8		
7		5			4			9
4				9		5	7	
		7	8		3			2
	3			2		7	1	
1	4				6			3
3			7				4	5
	7	4			5		6	
		6	2	4		3		

7.

4	9	7	2	3	1	5	6	8
3	6	5	8	7	4	2	9	1
2	8	1	5	9	6	4	7	3
7	2	8	1	6	5	9	3	4
1	4	6	9	8	3	7	5	2
5	3	9	4	2	7	1	8	6
6	1	3	7	4	9	8	2	5
8	7	4	3	5	2	6	1	9
9	5	2	6	1	8	3	4	7

8.

8	5		1			6		
		1		7			9	4
		9		3	6	1		
2				8		9	5	
	4		2		5			3
6		5			7			2
	2		7			3		9
5	8			2			7	
		6	3		1		8	

9.

8		2		1				4
		6	2		9		8	
	7		3			2	5	
	1			7	4			5
6		7	5					3
9					3	7	4	
		9		6	2		7	
	6			3		4		2
7	2		1			9		

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Cryptoquiz Special	CQS	1
Cryptoquizzes	CPQ	1 2 4 5
Expert and Challenger Crosswords	XEC	1 2
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BINGO PLAYS 2

Directions for solving Bingo Plays are on page 13.

Solution is on page 61.

1. The number one does not appear in column G or O or square AB, YB, or SN.
2. The number two does not appear on the card as a single-digit number, nor does it appear in row P, column G, or square SI, SN, or SO.
3. The number three does not appear in column B or square PG, AG, or SN.
4. The number four does not appear on the card as a single-digit number, nor des it appear in row P or L, square AG, AO, YI, YN, YO, or SO, or in the winning combination.
5. The number five does not appear in row S, column B or I, square LN, AO, YN, or YO, or in the winning combination.
6. The number six does not appear in row Y or S or column I or G.
7. The number seven does not appear in row P or L, column I, or square AG or YN.
8. The number eight does not appear on the card as a single-digit number, nor does it appear in row P or Y, column O, or square LN or SG.
9. The number nine does not appear on the card as a single-digit number, nor does it appear in row L or Y, column G, or square PN, PO, or AI.
10. Zero does not appear in column I or square AO, YO, or SO.
11. The number 22 is the only same-digit double-number combination on the card.
12. The number 12 is the only consecutive-digit (in either order) combination on the card.

	B	I	N	G	O
P	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40 41 42 43 44 45	46 47 48 49 50 51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70 71 72 73 74 75
L	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40 41 42 43 44 45	46 47 48 49 50 51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70 71 72 73 74 75
A	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	FREE	46 47 48 49 50 51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70 71 72 73 74 75
Y	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40 41 42 43 44 45	46 47 48 49 50 51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70 71 72 73 74 75
S	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40 41 42 43 44 45	46 47 48 49 50 51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70 71 72 73 74 75

	B	I	N	G	O
P	1	19	35	50	63
L	12	28	36	53	62
A	6	24	X	58	69
Y	7	22	31	57	72
S	14	18	40	47	73

The winning combination is:
63 62 69 72 73

LOGIC PROBLEM 6

THE BOOK CORNER

by Jean Hannagan

Last July, school had only been out for a few weeks when Frances heard her son complaining to his sister that he had nothing to do! She promptly called four of her friends, each of whom also had one son and one daughter, and the mothers agreed it was time for a trip to The Book Corner, a wonderful shop that carries a wide variety of used books. While at the store, Bertha and the other girls perused their favorite section, Mysteries, while their athletics-loving brothers (including Peter) browsed the Sports section. By the end of their search, the children each managed to find one book from their favorite section that they really wanted, which their mothers then purchased for them. Two of the lucky finds were "Outside the Window" and "Basketball Scoop." From this information and the following clues, can you match each mother (one's last name is Kent) with her son and daughter, as well as her children's book choices?

1. Ella was happy to find "The Locked Room." Her brother isn't the one who chose "The Baseball Plot." Mike, who is Nancy's brother, didn't get "Soccer Splash."
2. Agatha, who isn't Mrs. North, bought "The Lost Key" for her daughter. Art isn't the North boy.
3. Mary Slayton's children didn't select "The Baseball Plot" or "The Ticking Clock."
4. Art's sister Judy didn't get "The Secret Door," which wasn't purchased by the same mom who bought "The Football Story."
5. Samantha, who isn't the Hampton girl, didn't get "The Secret Door." Mrs. Roberts, who isn't Mike's mom, didn't purchase "The Lost Key."
6. Carolyn, who is Nancy's mother, didn't buy "The Baseball Plot."
7. Dorothy's purchase wasn't for Ella or Phil. Ella's brother didn't get "The Football Story."
8. Frank's mom purchased "A Tennis Problem" but not "The Ticking Clock." Agatha isn't Phil's mom. Nancy isn't the North girl.
9. Judy, who isn't the Roberts girl, didn't get "The Lost Key."
10. Mike isn't the Hampton boy and Phil isn't Mrs. North's son.

Solution is on page 62.

The table below was found to be most helpful in solving this Logic Problem.

first name	last name	son	sports book	daughter	mystery

LOGIC PROBLEM 7

FOR GOODNESS' FAKES!

by Mary Marks Cezus

Gerald and four college buddies wanted to buy some decorations to spruce up their dorm rooms, so they headed on down to a nearby florist's shop. While there, the friends considered buying live plants, but eventually decided on no-maintenance artificial ones in attractive woven baskets. No two friends purchased similarly styled baskets, nor did any two friends buy the same kind of artificial plant. Each purchase came to a different total ($19, $26, $34, $48, or $55). From this information and the clues below, can you determine each person's artificial plant, basket (one was a wishing well), and purchase amount?

1. Andrew's basket is neither the antique auto one (which doesn't contain the orchids) nor the burro basket.
2. The begonias cost less than Janet's plant, which cost less than the plant in the windmill basket.
3. The person who bought the owl basket and the person who bought orchids together spent less money than Suzanne.
4. The fern (which wasn't bought by Andrew) cost more than the plant in the antique auto basket.
5. The begonias (which aren't in the owl basket) cost more than Tricia's plant (which isn't in the burro basket).
6. The ivy cost more than $34.
7. The fuchsia is in neither the owl nor the windmill basket.

Solution is on page 62.
See page 7 for directions on how to use the solving chart.

	begonias	fern	fuchsia	ivy	orchids	auto	burro	owl	well	wind.	$19	$26	$34	$48	$55
Andrew															
Gerald															
Janet															
Suzanne															
Tricia															
$19															
$26															
$34															
$48															
$55															
auto															
burro															
owl															
well															
wind.															

It's not Penthouse!
It's...

FIGURE LOGIC 4

by Linda Thistle

Directions for solving Figure Logics are on page 11.

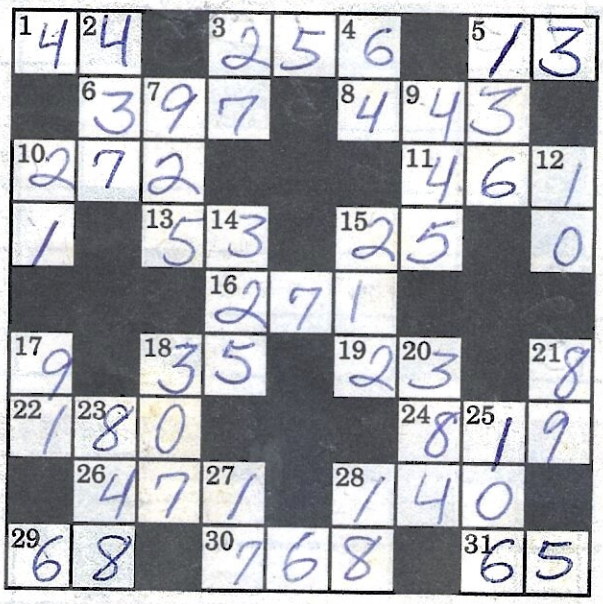
If needed, a starting help is on page 66.

ACROSS

1. 3-Across minus 15-Down
3. Four times 4-Down
5. One-fifth of 31-Across
6. Forty less than 2-Down
8. Two less than 9-Down
10. Two times 5-Down
11. 26-Across minus 12-Down
13. One-half of 25-Down
15. Two less than 3-Down
16. One less than 10-Across
18. Nine less than 1-Across
19. Thirty less than 13-Across
22. 12-Down times 28-Down
24. Nine times 17-Down
26. Two hundred more than 16-Across
28. Forty less than 22-Across
29. Fifty more than 28-Down
30. 11-Across plus 18-Down
31. Thirty more than 18-Across

DOWN

2. Six less than 8-Across
3. 12-Down plus 27-Down
4. One less than 31-Across
5. Four less than 28-Across
7. Six hundred more than 14-Down
9. Five times 21-Down
10. Two less than 19-Across
12. 18-Across minus 15-Across
14. Five times 31-Across
15. One-fourth of 23-Down
17. Seven times 5-Across
18. Ninety less than 6-Across
20. One-half of 30-Across
21. 29-Across plus 10-Down
23. Eighty more than 30-Across
25. 7-Down minus 24-Across
27. One-fourth of 29-Across
28. One more than 27-Down



Solution is on page 60

BLACK MAGIC

Blacken in exactly ten of the empty squares in each grid below in such a way that each numbered square accurately indicates how many immediately adjacent squares are black. For example, a square containing "3" indicates that three and only three of the adjacent squares, moving horizontally, vertically, or diagonally, are black. It may be helpful to mark any square that you decide is not black with "0."

Solutions are on page 61.

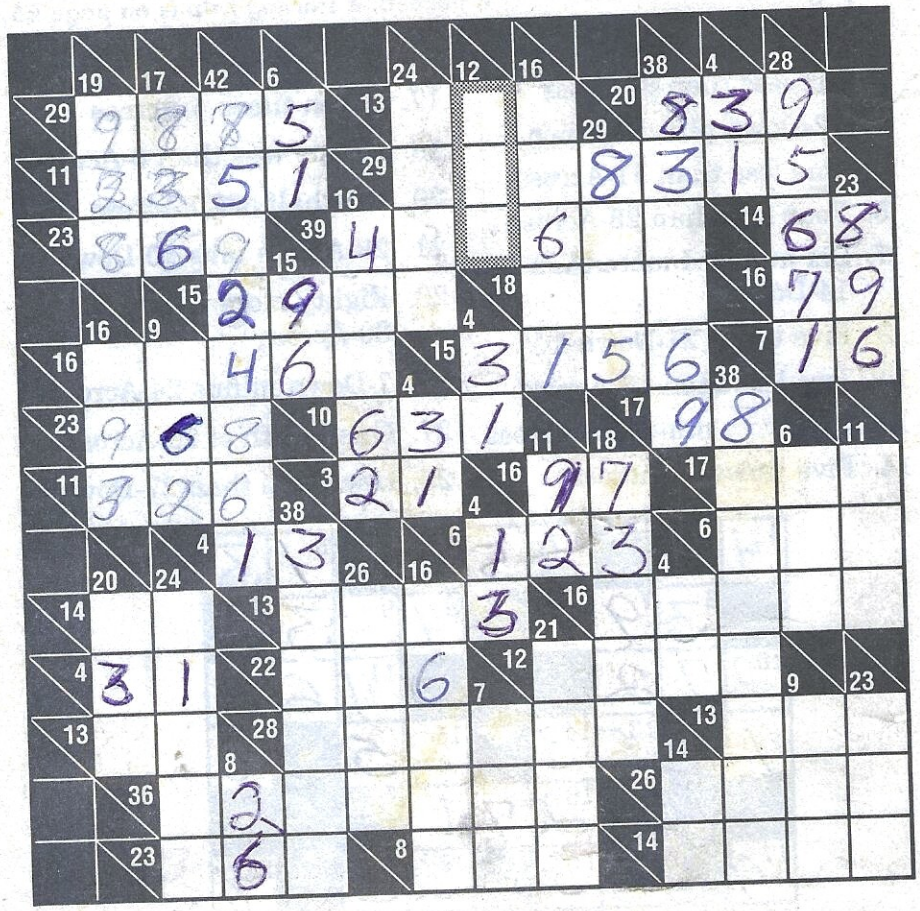
1.

	3	1				
			1			
	4					1
	2		3	2		
1	1					2
				4		
						2

2.

			2			
2						2
			1			
2		3				3
			3	3		
					2	

CROSS SUMS



9.

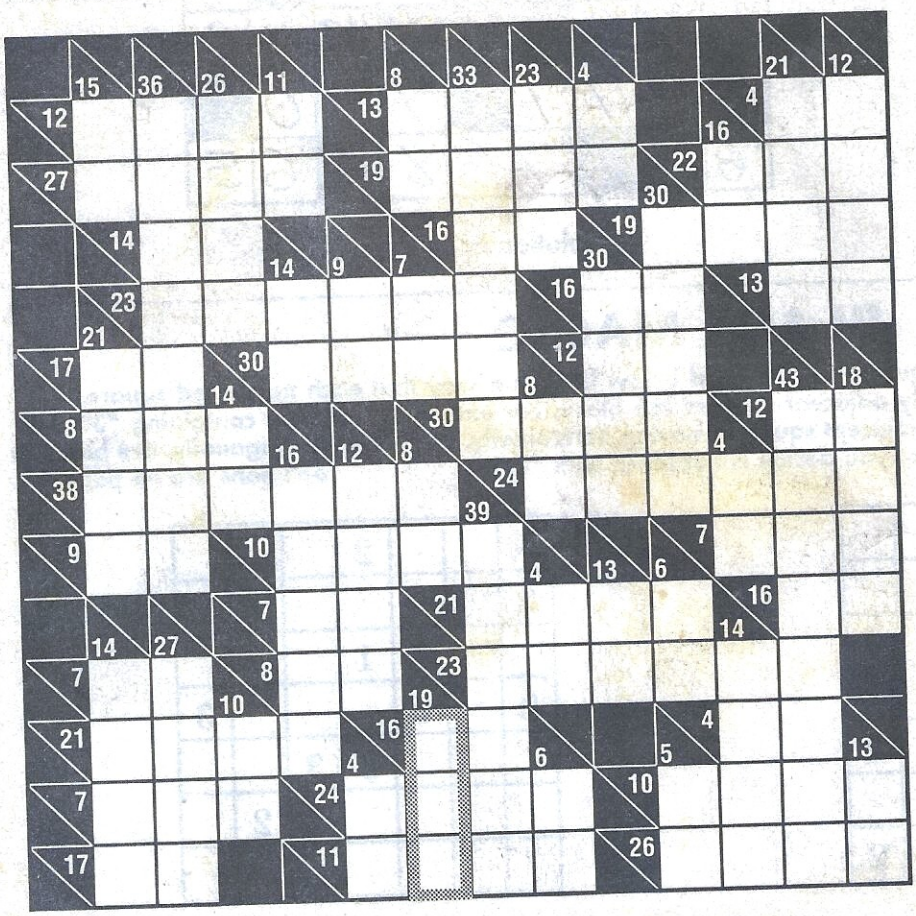
We have outlined one area in each diagram on these two pages. If you need help starting a puzzle, the digit combination to go into that area is listed on page 66.

Solutions are on page 59.

Directions for solving are on page 8.

Karen
"Chapel of Love"
What's a Flower Girl?
R & B Records

10. Director: Allison Mitchell



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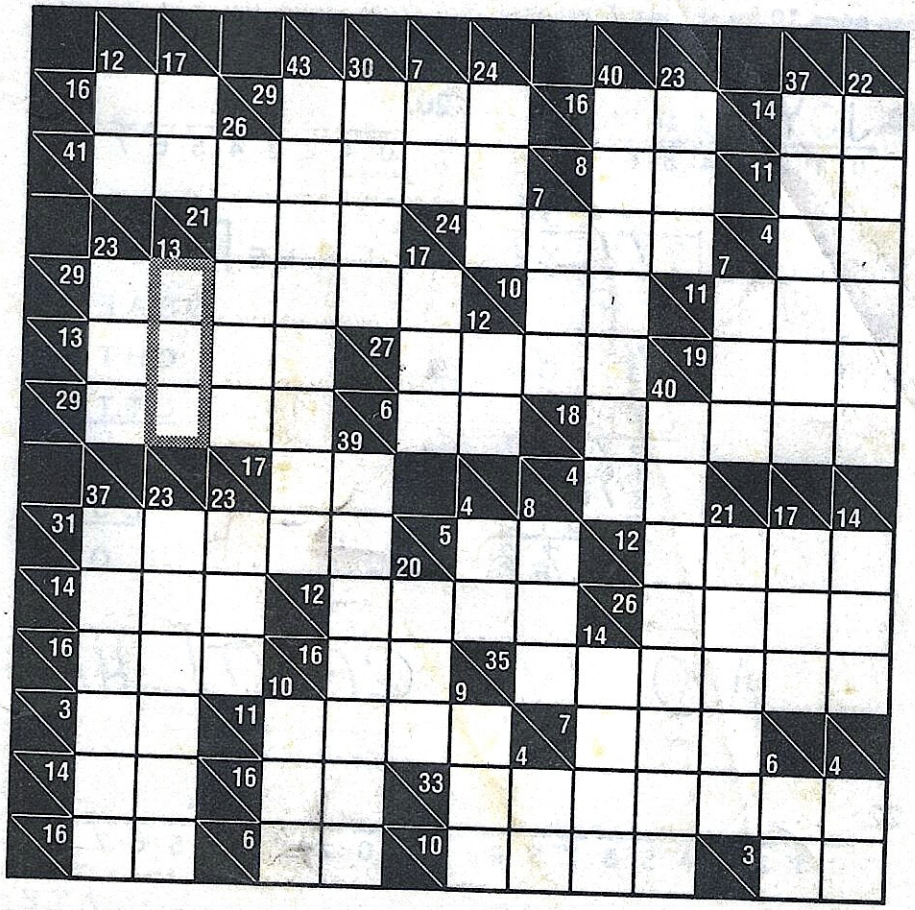
CROSS SUMS

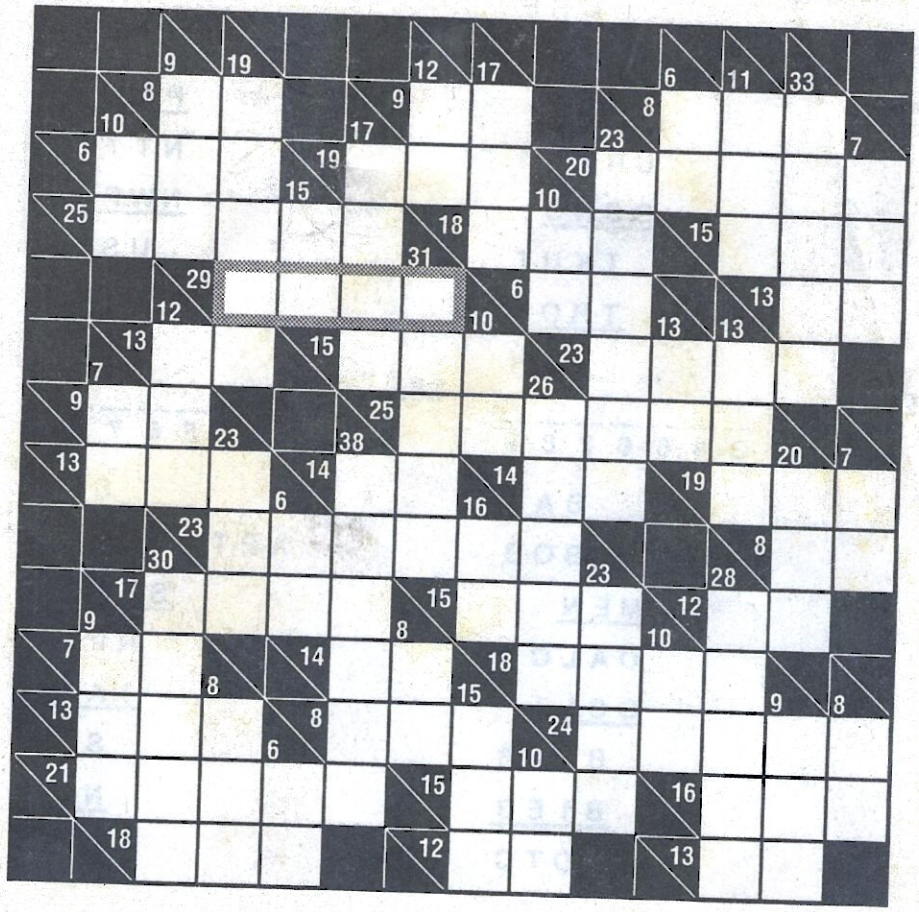
11.

Solutions are on page 59.



12.

Watch my rear end.



WORD ARITHMETIC

See page 10 for solving directions.

Answers are on page 66.

19.

JOYFUL GENT

0 1 2 3 4 5 6 7 8 9

149

OUT

3455 | 514867

FULL | LOUNGE

3455

FULL

16936

OGTFG

13820

OFNYJ

3167

FOOGE

31025

FOJTL

72

EY

20.

0 1 2 3 4 5 6 7 8 9

TAT

WEE | BOOTEE

OSAF

OHTE

OTTB

BFCE

OSAF

OBE

21.

0 1 2 3 4 5 6 7 8 9

ERNIE

IF | CHAFER

IF

BAA

EHF

AHF

AFF

AZE

RHZ

EER

IF

AC

NO WE CAN'T! HA-HA-HA!

22.

0 1 2 3 4 5 6 7 8 9

ORE

DOE | SHORT

DOE

URTR

OSHO

TKUT

TROK

DFH

23.

0 1 2 3 4 5 6 7 8 9

ATE

PAL | SPITE

PAL

NTTT

NWPW

USTE

UESP

PL

24.

0 1 2 3 4 5 6 7 8 9

HEP

ASP | LEAST

ASP

PAHS

PICI

IPHT

IHSR

ICP

25.

0 1 2 3 4 5 6 7 8 9

BAN

ALE | NABOB

MEN

OALO

OCLI

BELB

BIEB

OTC

26.

0 1 2 3 4 5 6 7 8 9

SIN

APT | SNORE

SFO

RPR

IAI

SAE

NON

TS

27. B

0 1 2 3 4 5 6 7 8 9

ODE

SNOB | DEBATER

DSASB

AENTE

AMBEB

NORER

NDMDB

DSSR

DSN

MBT

0

LOGIC PROBLEM 8

PIT STOP PETE'S

by Diane Baldwin

Many commuters stop at Pit Stop Pete's, a popular local mini-mart, on their way to work. Last Tuesday morning, the parking space directly in front of Pit Stop Pete's was continuously occupied from 7 a.m. to 8 a.m by four different customers (including Pat) who each parked in the space for a different number of 5-minute increments. They each drove a different kind of vehicle (one had a convertible) and each person stopped for a different reason (one stopped to buy a magazine). From this information and the following clues, can you determine each driver's car, errand, parking time, and order of arrival?

1. The person in the hatchback parked twice as long as the man who stopped to buy a birthday card.
2. The van belongs to the woman who was parked five minutes less than the first person to use the space.
3. Lee parked right after Bob (a man) and right before the man who stopped to rent a video.
4. Kit parked sometime before the woman who parked the shortest time of the four.
5. The person who stopped to make a phone call parked twice as long as the woman in the sedan.

Solution is on page 63.

See page 7 for directions on how to use the solving chart.

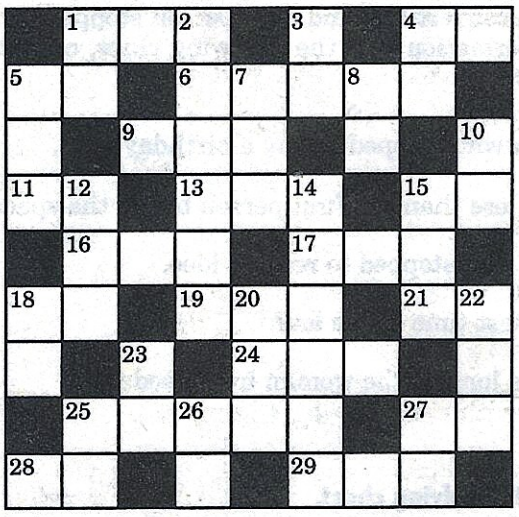
	conv.	hatch	sedan	van	card	mag.	phone	video	length of time				1st	2nd	3rd	4th
Bob																
Kit																
Lee																
Pat																
1st																
2nd																
3rd																
4th																
length of time																
card																
mag.																
phone																
video																

FIGURE LOGIC 5 & 6

by Linda Thistle

Directions for solving Figure Logics are on page 11.

Starting helps are on page 66.

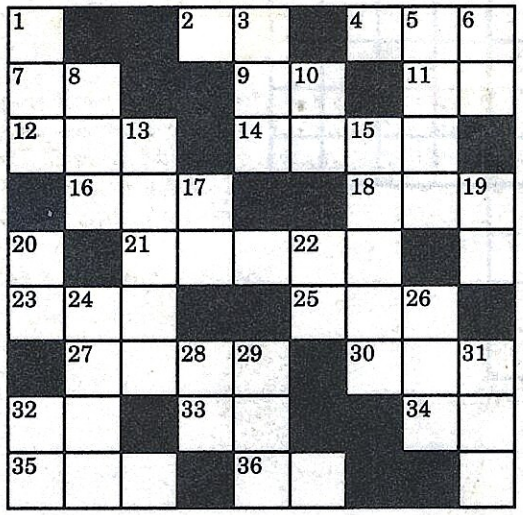


ACROSS

1. Two times 21-Across
4. 3-Down minus 5-Across
5. 28-Across plus 1-Down
6. One-fifth of 25-Across
9. 20-Down minus 3-Down
11. 21-Across minus 28-Across
13. 1-Across plus 9-Across
15. 28-Across plus 10-Down
16. Four times 22-Down
17. Five times 12-Down
18. Consecutive digits
19. 16-Across minus 5-Down
21. 3-Down plus 26-Down
24. 19-Across minus 27-Down
25. Different odd digits
27. 11-Across minus 4-Down
28. 8-Down minus 27-Down
29. 4-Down times 27-Down

DOWN

1. Five more than 10-Down
2. 6-Across times 26-Down
3. Three times 27-Across
4. 18-Across plus 26-Down
5. 12-Down plus 23-Down
7. One-half of 17-Across
8. 25-Down minus 4-Across
10. 18-Down minus 27-Down
12. 15-Down minus 18-Across
14. Digits of 2-Down rearranged
15. Eight times 5-Across
18. 1-Down plus 26-Down
20. 29-Across minus 24-Across
22. 1-Across plus 8-Down
23. 27-Across plus 18-Down
25. 15-Across plus 4-Down
26. One-half of 8-Down
27. One-half of 4-Across



ACROSS

2. One less than 10-Down
4. Consecutive digits in some order
7. One less than 34-Across
9. Three less than 6-Down
11. Two times 22-Down
12. One-fifth of 24-Down
14. 2-Across times 19-Down
16. 34-Across plus 31-Down
18. 12-Across minus 22-Down
21. One digit is the sum of the other digits
23. 9-Across times 17-Down
25. Two times 29-Down
27. 36-Across times 10-Down
30. Consecutive digits in some order
32. Three times 7-Across
33. One digit is two times the other
34. Consecutive digits in some order
35. Consecutive digits in some order
36. Consecutive digits in some order

DOWN

1. 35-Across minus 25-Across
3. 4-Across minus 1-Down
5. 20-Down times 28-Down
6. 28-Down minus 36-Across
8. One-third of 18-Across
10. Two times 9-Across
13. Three times 21-Across
15. The sum of its first three digits is the number formed by its last two digits
17. Consecutive digits in some order
19. 7-Across plus 32-Down
20. Seven times 17-Down
22. Consecutive digits in some order
24. Consecutive digits in some order
26. Digits of 25-Across rearranged
28. Six less than 19-Down
29. 7-Across times 17-Down
31. 4-Across plus 10-Down
32. Consecutive digits in some order

Solutions are on page 60

GO FIGURE!

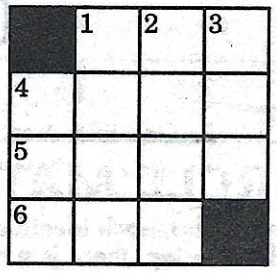
In Go Figure!, use the ACROSS and DOWN clues to determine which of the digits 1 through 9 belongs in each square in the diagram. Digits may be repeated within a number, and no zeros are used. **Solution is on page 60.**

ACROSS

1. This is a perfect square. (Note: A perfect square is the product of a number multiplied by itself; 16 is a perfect square because 4 x 4 = 16.)
4. Its first digit times its second equals the number formed by its last two digits.
5. Its second and third digits are the same even digit.
6. This is three consecutive digits, in some order.

DOWN

1. The number formed by its first two digits is a perfect square, the number formed by its last two digits is a perfect square, and its first and last digits are the same.
2. This is four consecutive digits, in some order, with the last digit being the smallest.
3. This is a perfect square.
4. This is three consecutive even digits, in some order.

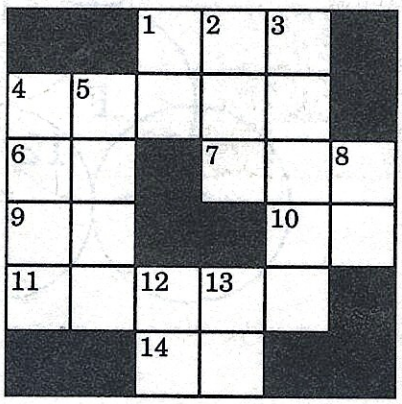


GRIDDIGITS

Griddigits are solved in crossword puzzle fashion using the numbers 1 – 9 instead of letters. Each Across and Down clue gives the sum of the digits of that answer. The trick here is that all answers consist of a series of consecutive numbers, although the numbers may be out of order in the answer. For example, 10-Across must add up to 3. The two consecutive numbers that add up to 3 are 1 and 2, but they can be placed in any order in the diagram. 8-Down adds up to 5. The two consecutive numbers that add up to 5 are 2 and 3. Since both answers require a 2, and that is the only number they have in common, that number must go into the shared box.

Solution is on page 60.

ACROSS	DOWN
1. 15	1. 13
4. 35	2. 15
6. 13	3. 15
7. 9	4. 26
9. 15	5. 30
10. 3	8. 5
11. 25	12. 13
14. 11	13. 9

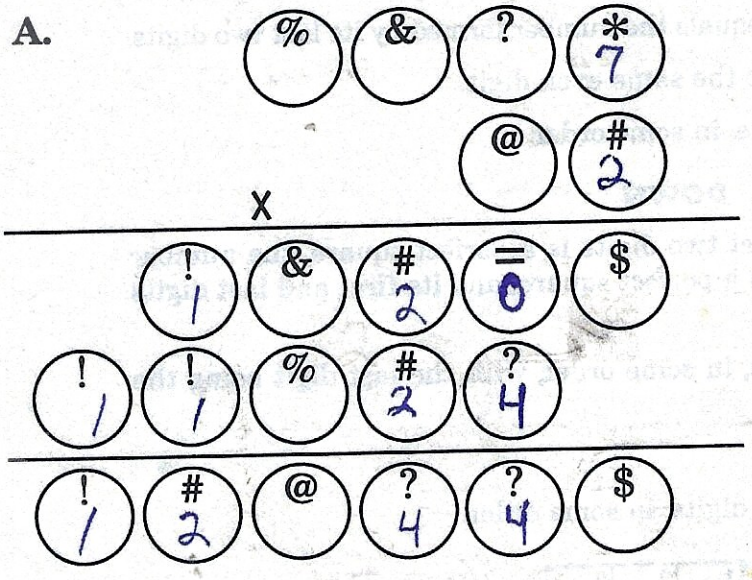


TWO-PART MATH

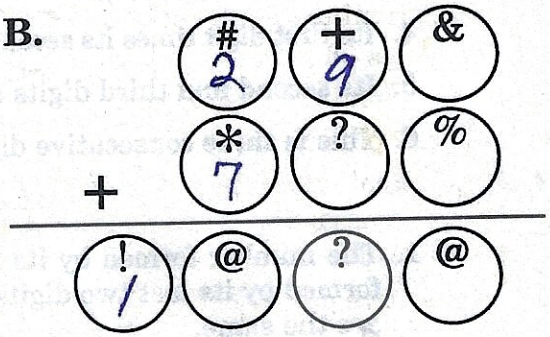
Each of the symbols in the two arithmetic problems below stands for one of the numbers 0 through 9, but no two symbols stand for the same number. Each symbol does stand for the same number through both problems, however, so if you were to place a "3" in the upper left circle in Problem A, you would also place a "3" in any other circle containing a percent symbol. By working back and forth from one problem to the other, can you deduce the number represented by each symbol?

Solution is on page 65.

A.



B.



C's the Mo-Ment?

CIRCLE MATH

The diagram below is composed of overlapping circles, each identified by a letter. Each letter has a different number value from 1 through 9. Where some circles overlap, there is a number: This number is the SUM of the values of the letters in the overlapping circles. Can you figure out the correct number value for each letter?

Answer is on page 65.

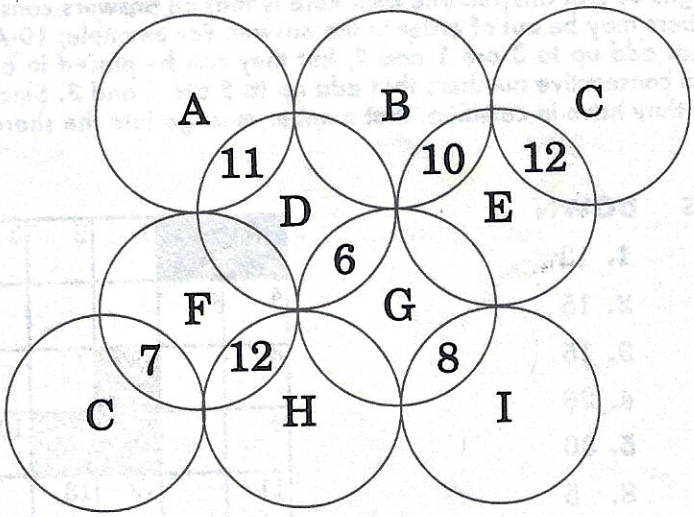


FIGURE LOGIC 7

by Linda Thistle

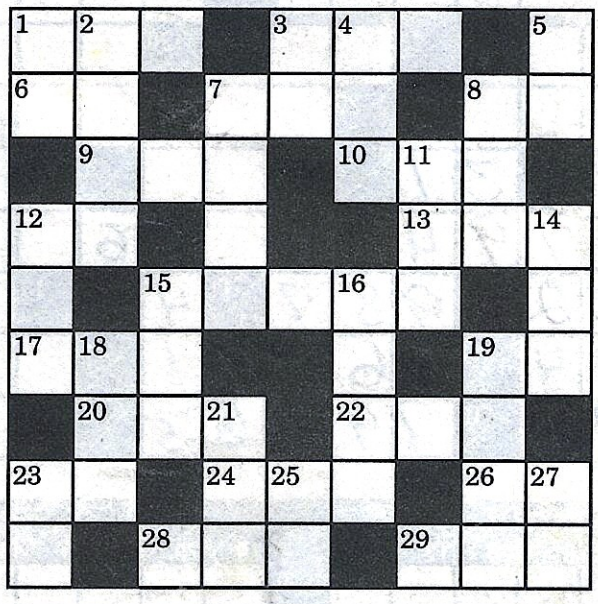
Directions for solving Figure Logics are on page 11. If needed, a starting help is on page 66.

ACROSS

1. 29-Across minus 28-Across
3. 23-Across plus 21-Down
6. Forty more than 19-Across
7. 18-Down minus 3-Across
8. Two times 26-Across
9. 17-Across minus 23-Across
10. 1-Across plus 15-Down
12. 8-Across minus 23-Across
13. Digits of 14-Down rearranged
15. Consecutive digits rearranged
17. Thirty less than 20-Across
19. One-half of 1-Down
20. Four hundred more than 15-Down
22. Six more than 8-Down
23. Two less than 23-Down
24. 3-Across plus 4-Down
26. 1-Down minus 27-Down
28. One-half of 22-Across
29. One-half of 2-Down

DOWN

1. Consecutive digits in ascending order
2. 12-Across times 12-Down
3. 23-Down minus 26-Across
4. One hundred less than 28-Across
5. Six less than 19-Across
7. Sum of the digits is 12-Across
8. 6-Across plus 10-Across
11. 18-Down minus 1-Across
12. One-fourth of 10-Across
14. One-fourth of 17-Across
15. Three times 23-Down
16. One-sixth of 15-Across
18. Two times 13-Across
19. Six times 28-Across
21. One-half of 9-Across
23. Two times 25-Down
25. 5-Down plus 27-Down
27. Five more than 12-Across



Solution is on page 60

MINUTE MATH

1. On a 100-question multiple-choice test, a student missed 1/5 of the first 25 questions, got 90% of the next 50 correct, and missed two of the last 25. What was his test score expressed as the percentage of questions answered correctly?

2. In the following multiplication problem, Q, B, and R stand for three different single-digit numbers. What are they?

$$\begin{array}{r} Q\ B \\ \times\ Q\ B \\ \hline B\ R \\ Q\ B \\ \hline Q\ R\ R \end{array}$$

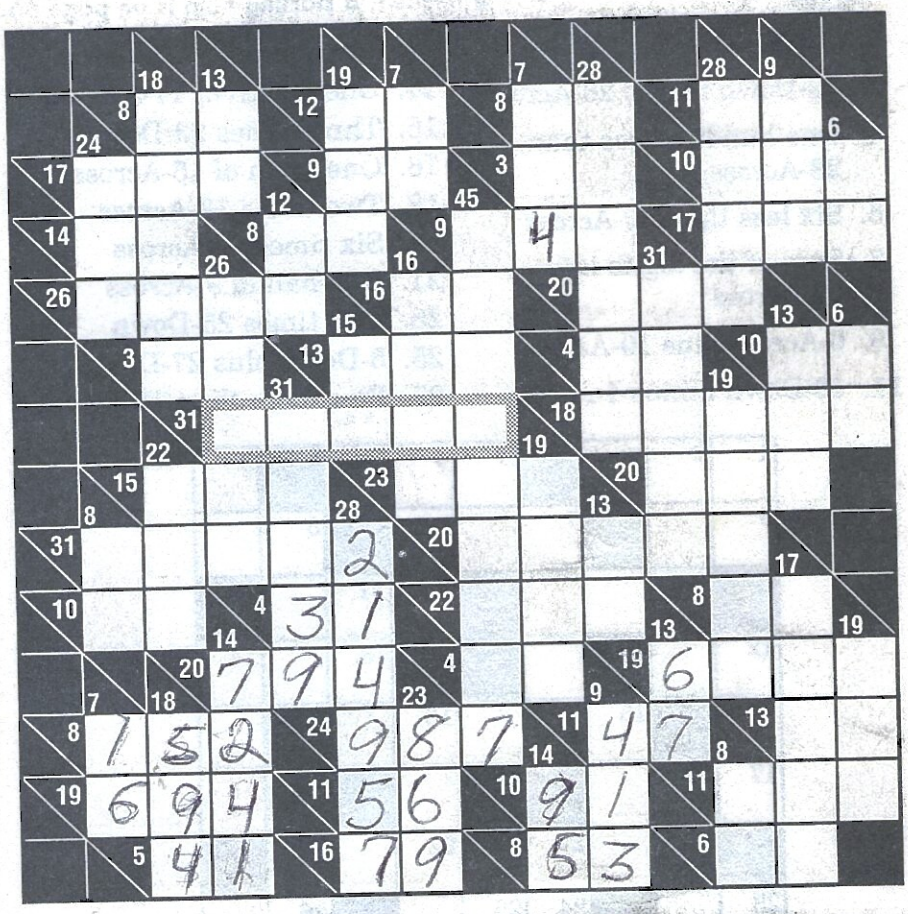
3. With an ordinary deck of 52 playing cards, what is the probability that a card drawn at random will be a heart, an ace, or a king?

4. A grocer made up a 100-pound mixture of candies, consisting of 40 pounds of small chocolate candies and 60 pounds of small peanut-butter candies. He had been selling the chocolate candies for $3.00 per pound and the peanut-butter candies for $2.50 per pound. To take in the same amount of money as he would if the candies were sold separately, how much should he charge per pound for the mixture?

Answers are on page 65.

CROSS SUMS

13.

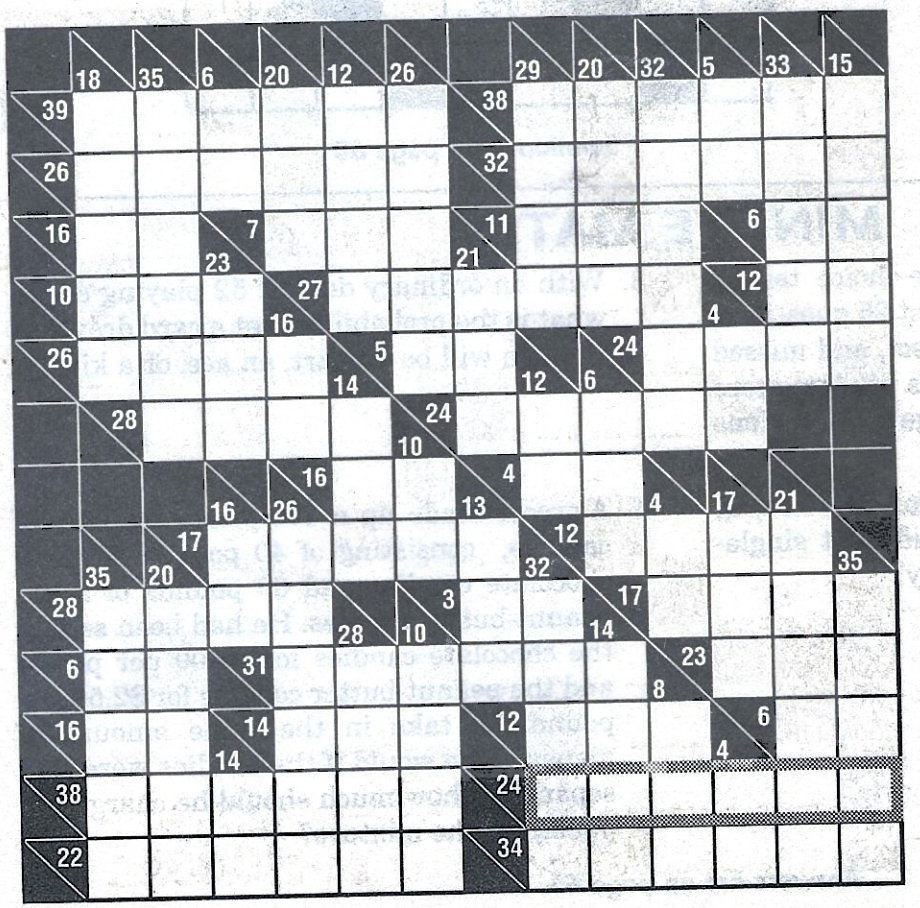


We have outlined one area in each diagram on these two pages. If you need help starting a puzzle, the digit combination to go into that area is listed on page 66.

Solutions are on page 59.

Directions for solving are on page 8.

14.



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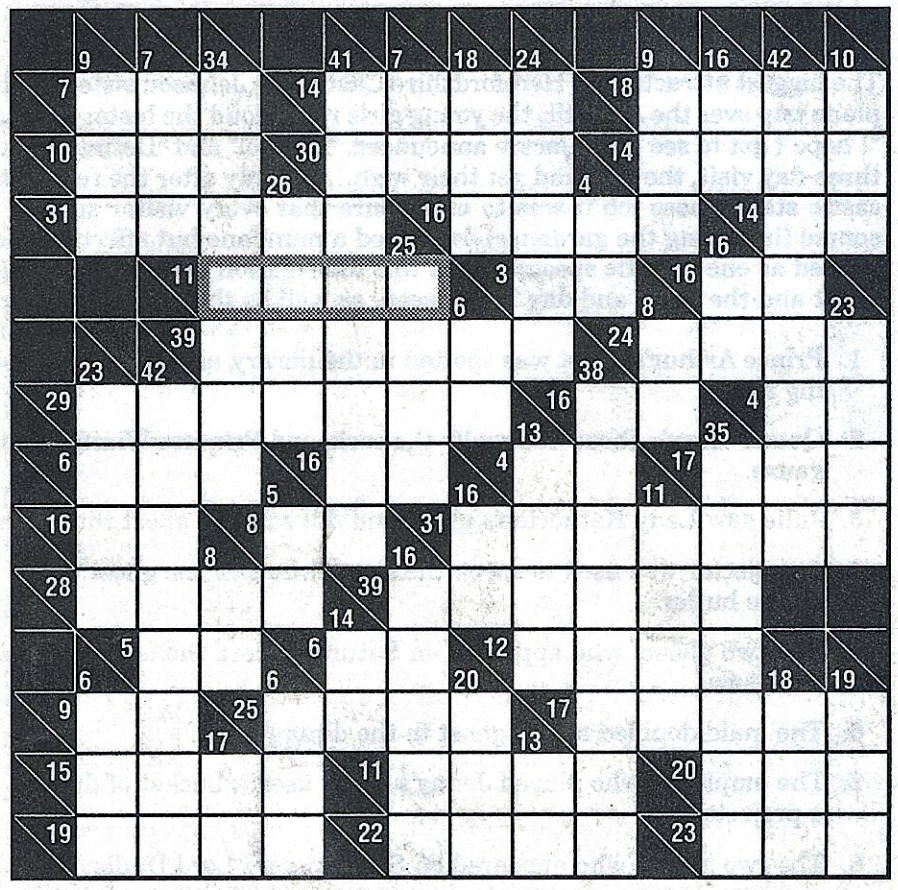
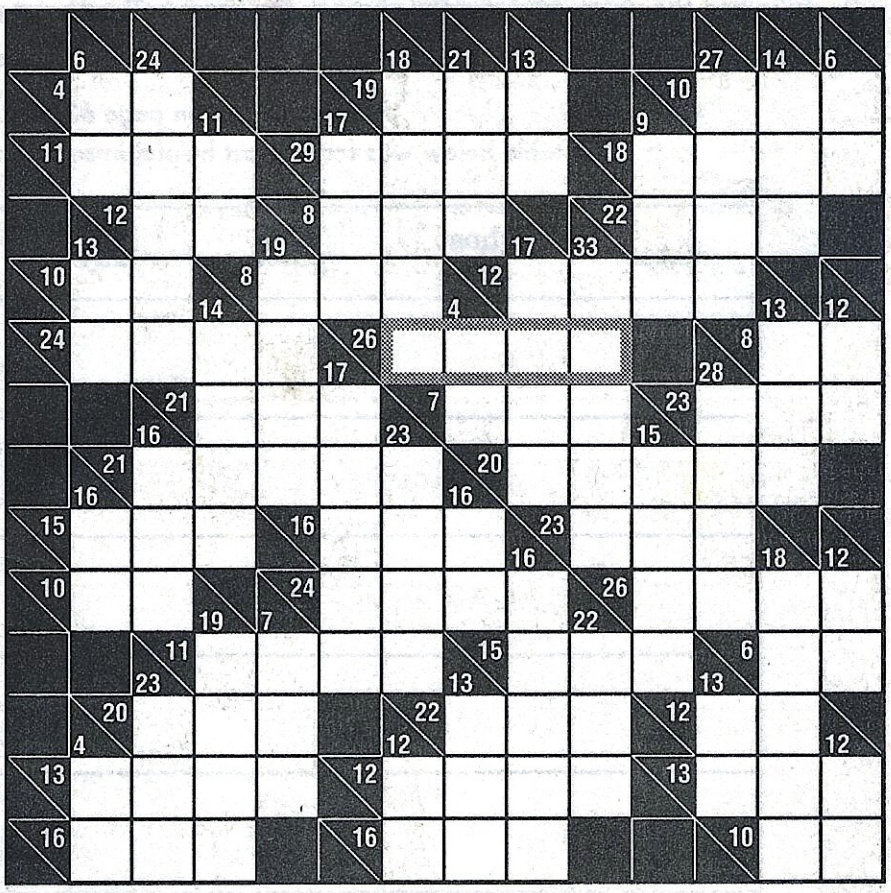
CROSS SUMS

15.

Solutions are on page 59.



16.



LOGIC PROBLEM 9

HAUNTED HOLIDAY

by Susan Zivich

The biggest attraction at Herefordshire Castle, the Johnson sisters' holiday destination, was its ghosts. On the plane trip over the Atlantic, the young girls read aloud the history of the haunted castle with anticipatory glee. "I hope I get to see one!" Jackie announced. "Me too!" and "Definitely!" chimed in her four sisters. During their three-day visit, the girls did get their wish...but only after the resident apparitions got a little "help" from the castle staff, whose job it was to make sure that every visitor spotted a ghost, real or otherwise. Castle personnel (including the gardener) each used a mundane but effective trick to spook the guests, and each moonlighted as one specific specter. From this information and the following clues, can you determine each sister's ghost and the place and day it was seen, as well as the staff member responsible and trick used?

1. Prince Arthur's ghost was spotted in the library, and the only ghost seen on Friday appeared in the drawing room.
2. Queen Mary's ghost was really the cook, and Princess Winifred was actually a castle employee covered in gauze.
3. Julie saw Lady Katherine's ghost and Jill saw the ghost that haunts the garden.
4. A projector was used to spook the sister who saw the ghost in the great hall, and a microphone was used by the butler.
5. The two ghosts who appeared on Saturday were the one drenched in phosphorescent paint and the one Jane saw.
6. The maid doubled as the ghost in the dining room.
7. The employee who played Jenny's ghost used a bucket of dry ice. Jane didn't see the ghost created with a projector.
8. The two ghosts who appeared on Sunday were Lord Dudley and the one played by the chauffeur.
9. Julie and the sister who saw the ghost in the great hall both got pictures of their spooks.
10. Jill saw her ghost the day after the one in the dining room had been spotted.

Solution is on page 63.

The table below was found most helpful in solving this Logic Problem.

sister	ghost seen	place	day	staff member	trick

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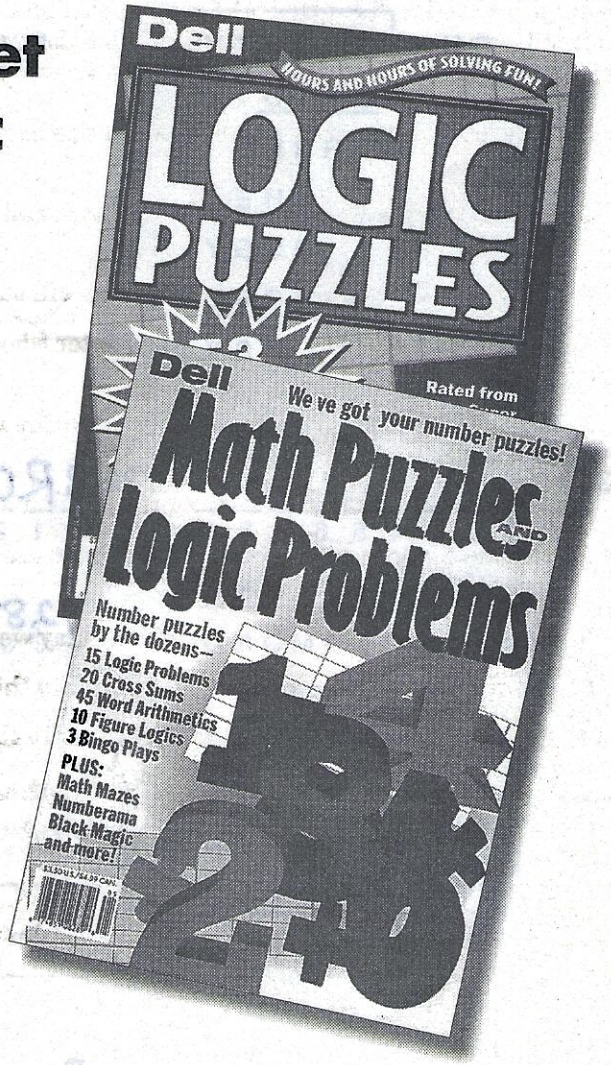

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WORD ARITHMETIC

See page 10 for solving directions.

Answers are on page 66.

28.

0 1 2 3 4 5 6 7 8 9

```
          FRY
SHE | EIGHTY
      EFID
       RRHT
        SHE
        RSGY
        RGSD
          SY
```

29.

0 1 2 3 4 5 6 7 8 9

```
          COT
EVER | TAVERN
       TEAO
        SOCR
        UROA
        ERRON
        EEANA
          OVR
```

30.

0 1 2 3 4 5 6 7 8 9

```
          ART
AQUA | QUARTZ
       QRAY
        YTIT
        AQUA
        AYRIZ
        AZCQL
         RRRQ
```

31.

0 1 2 3 4 5 6 7 8 9

```
          ONE
HOLD | DIAMOND
       NOIOD
        AASLN
        LHEII
         HLLND
         HIDLD
          SOLI
```

32. BROADLYPUT

0 1 2 3 4 5 6 7 8 9

```
          189
          RUT
7281 | 1377219
POUR | RAPPORT
       7281
        POUR
        64911
        YDTRR
        58248
        LUODU
         66639
         YYYAT
         65529
         YLLOT
          1110
          RRRB
```

33.

0 1 2 3 4 5 6 7 8 9

```
          PEN
IRKS | SHOPPER
       NNRHT
        PESPE
        PPNPS
         RHTNR
         OESNT
          HSTR
```

34.

0 1 2 3 4 5 6 7 8 9

```
          IS
QUIT | TRIES
       QUIT
        QISUS
        QFAAV
         IVSR
```

35. B EPSR PY

0 1 2 3 4 5 6 7 8 9

```
          YEP
ERR | YUPPIE
       PYMB
        DUPI
        IEYB
         MSIE
         MRIR
          YBP
```

36. V

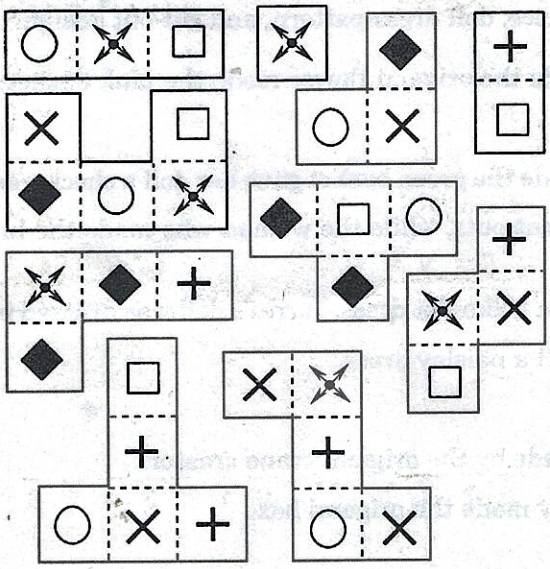
0 1 2 3 4 5 6 7 8 9

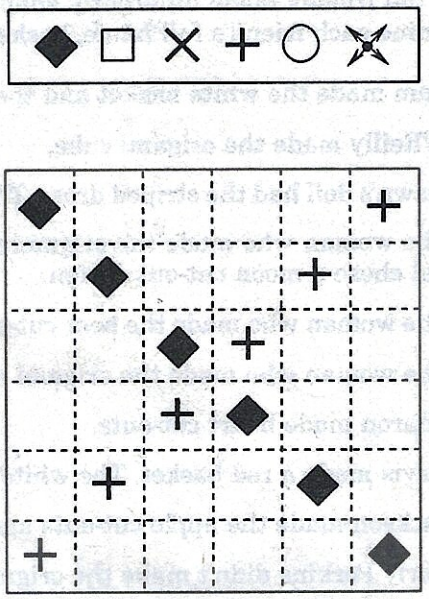
```
          SAD
DOE | SIDLES
       IOLD
        ASOE
        ULIC
         OCUS
         OVUS
          CVV
```

JIGSAW LOGIC

All you have to do to solve this puzzle is fit the ten pieces below on the left into the grid so that each line across and each line down contains the six different symbols pictured above the grid. The symbols already in the grid are there to help you figure out how the pieces fit together and should not be moved or changed in any way. Likewise, each of the ten pieces must be kept as a unit as it is pictured. The pieces can be turned in any direction to fit into the grid. When you've finished, no symbol will be repeated within a line either across or down.

Solution is on page 61.





SUM LOGIC

The object here is to place the numbers surrounding the diagram into its empty boxes in such a way that the five numbers in each row, each column, and each of the two diagonals add up to 99. Numbers cannot be repeated within a row, column, or diagonal. HANDICAP: Each number must be placed in one of the boxes of the row or column outside of which it now appears.

Solution is on page 60.

	13	18	4	24	19	
30				32		11
15	44					23
12			21			31
31					11	15
41		7				30
	16	13	2	8	24	

LOGIC PROBLEM 10

"FAIR WEATHER" FRIENDS

by Susan Zivich

On a fine summer day, five good friends went to Logicville's annual Outdoor Arts and Crafts Fair to try their hands at some excitingly different crafts from around the world. During their visit, the friends visited four different specialty tables together, at which they each made a different, unique item: At the Norwegian table, the friends made differently colored paper baskets; at the Japanese table, they created unique origami; at the African corn-husk doll table, they fashioned dolls with differently patterned dresses; and at the Polish cut-out table, the friends made differently shaped cut-outs. From this information and the following clues, can you determine each friend's full name, basket color, origami piece, doll dress-pattern, and cut-out design?

1. Pam made the white basket and the woman who made the origami flower made the pink basket.
2. O'Reilly made the origami cube.
3. Dawn's doll had the striped dress. The woman who made the green basket gave her doll a checkered dress.
4. The woman who made the origami frog created tree cut-outs, while the woman who made the blue basket chose a moon cut-out design.
5. The woman who made the bear cut-outs gave her doll a polka-dot dress. Torres's doll was dressed in plaid.
6. The woman who made the origami crane gave her doll a paisley dress.
7. Sharon made heart cut-outs.
8. Davis made a red basket. The white basket wasn't made by the origami crane creator.
9. Jackson made the apple cut-outs and her friend Jenny made the origami box.
10. Carly Perkins didn't make the origami frog.

Solution is on page 63.

The table below was found to be most helpful in solving this Logic Problem.

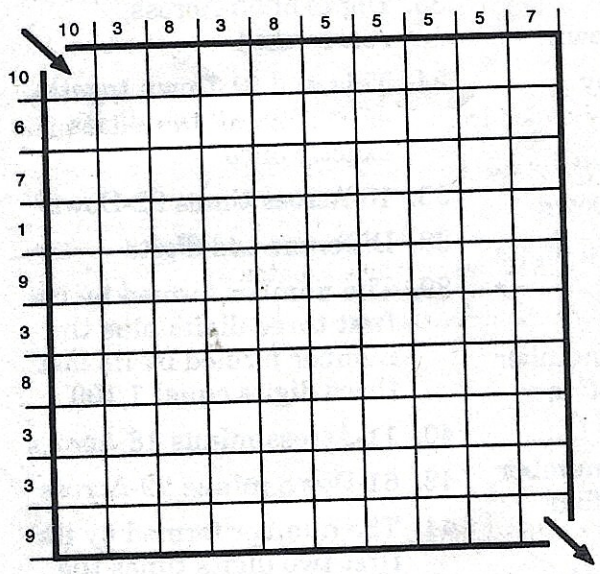
first name	last name	basket color	origami	doll dress	cut-out

MATH MAZES

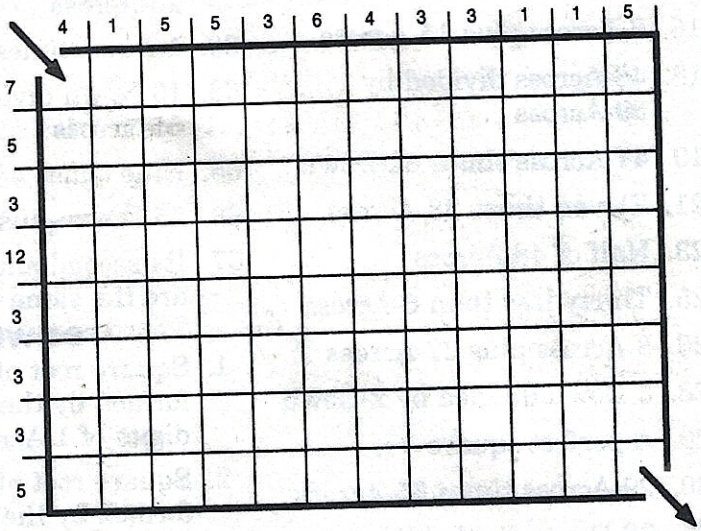
The goal here is the same as in any maze: Draw a single line from start to finish without crossing your own path. What makes these mazes special, though, is that you'll have to use some deductive reasoning to find your way. Each maze is divided into squares; the number at the beginning of each row and column tells you exactly how many of those squares to cross through in order to correctly reach the finish. For example, in Math Maze 1, the number 10 is at the beginning of the first row across; this means you must cross through ten of the boxes in that column once each. You need not cross through them at once; you may leave a row or column and return to it — you might cross the first box of the first column, then continue straight down, but you would have to return to the first row later so that you use exactly ten boxes before you finish the maze. No diagonal moves are allowed. Solving hint: To begin, blacken any box that you determine will not be used, and place a dot in any box that you know must be used. NOTE: Do not pass through the bricked-in boxes in Math Maze 3.

Solutions are on page 61.

1.



2.



3.

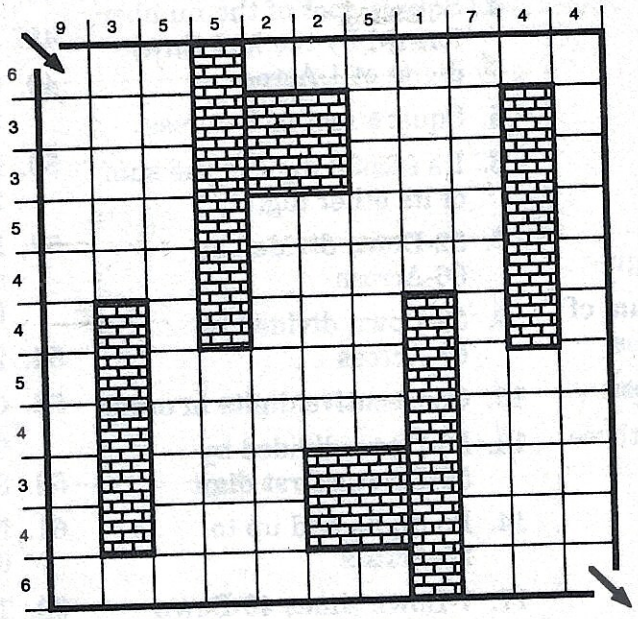


FIGURE LOGIC 8

by Evelyn Rosenthal

Directions for solving are on page 11.

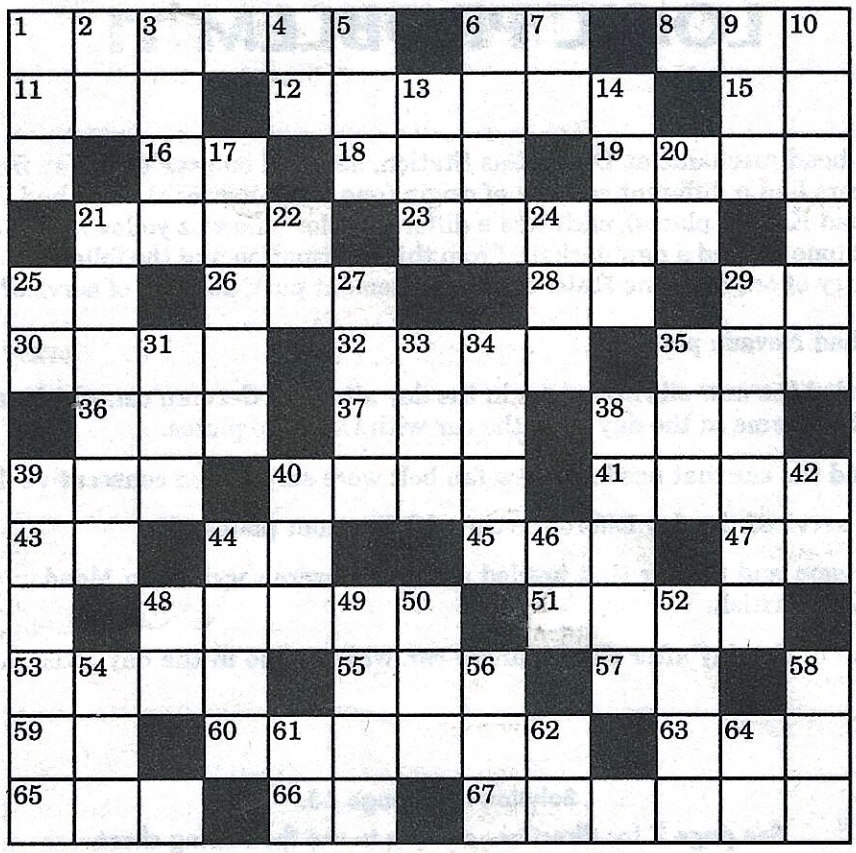
If needed, a starting help is given on page 66.

ACROSS

1. Its third and sixth digits are the same number
6. Six less than 66-Across
8. 37-Across minus 25-Across
11. Number that reads the same backwards and forwards
12. 21-Down plus 29-Down
15. 20-Down minus 2-Down
16. 6-Across plus 15-Across
18. 48-Across divided by 39-Across
19. 44-Across times 64-Down
21. Eleven times 38-Across
23. Half of 48-Across
25. Thirty less than 6-Across
26. 8-Across plus 37-Across
28. 3-Down divided by 2-Down
29. A perfect square
30. 29-Across times 55-Across
32. 38-Down divided by 4-Down
35. Eleven times 48-Down
36. Square of 4-Down
37. Square of 25-Across
38. Consecutive digits in descending order
39. 23-Across divided by 55-Across
40. 32-Across times 32-Across's second digit
41. 25-Down times the sum of 6-Across and 44-Across
43. 6-Across plus 29-Across
44. 16-Across divided by three
45. 34-Down divided by 29-Across
47. 49-Down divided by 66-Across
48. Square of 55-Across
51. 29-Down divided by 2-Down
53. The number formed by its first two digits minus the number formed by its last two equals 44-Across
55. Square of 29-Across
57. 33-Down divided by 33-Down's third digit
59. 26-Across divided by 25-Across
60. 1-Down times 5-Down
63. 10-Down divided by 65-Across
65. Nine times 48-Down
66. 25-Down plus 46-Down
67. Its second and third digits are the same

DOWN

1. Square root of the number formed by the last five digits of 1-Across
2. Square root of the number formed by the last four digits of 1-Across
3. Number that reads the same backwards and forwards
4. Square root of the number formed by the last three digits of 1-Across
5. Square root of 1-Across
6. Its second digit is the sum of its other digits
7. 52-Down divided by 66-Across
9. 39-Down divided by 63-Across
10. Consecutive digits in order
13. 56-Down divided by 56-Down's first digit
14. Its digits add up to 25-Across
17. 7-Down times 40-Down
20. Seven times 25-Down
21. Square of 36-Across
22. 42-Down minus 25-Across
24. Its digits add up to 15-Across
25. 46-Down reversed
27. 66-Across times 62-Down
29. 1-Across minus 60-Across
31. Two times 29-Across times 42-Down
33. Digits of 55-Across, rearranged
34. This and 21-Down together contain all ten digits exactly once
35. 16-Across times 22-Down
38. Different odd digits
39. The number formed by its first three digits plus the number formed by its last three digits equal 1,100
40. 11-Across minus 18-Across
42. 61-Down minus 29-Across
44. The number formed by its first two digits times the number formed by its last two digits equals 1-Down
46. 29-Across plus 4-Down
48. An odd number
49. Consecutive digits, but not in order
50. Its digits add up to 25-Down
52. Number that reads the same backwards and forwards
54. 22-Down times 62-Down
56. Consecutive digits in ascending order
58. 35-Down minus 39-Across
61. Number halfway between 6-Across and 46-Down
62. Three times 25-Across
64. A perfect square

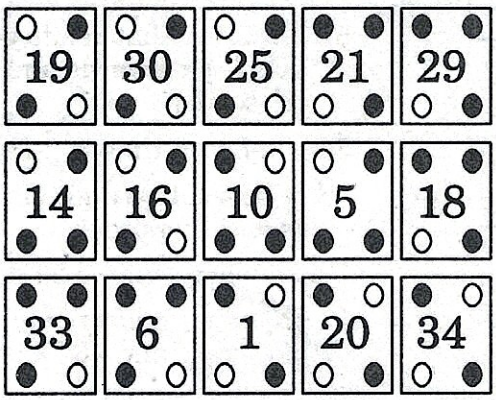


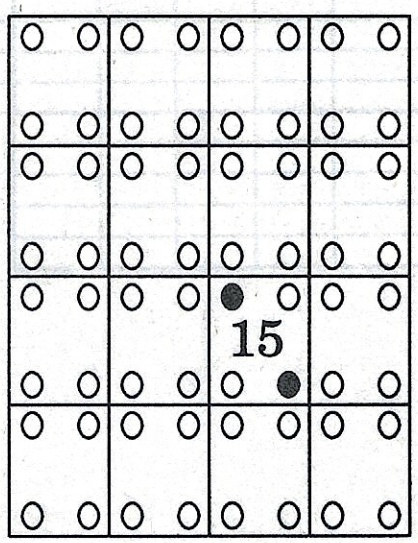
Solution is on page 60

SUM SPOTS

The idea of Sum Spots is to form a magic number square, in which the sums of the numbers in each row, column, and diagonal are the same, by placing numbered tiles into the squares of the diagram. In this puzzle, the sum is 74. Use each tile once and only once. HANDICAP: Each tile has a black or white dot in each corner. As a tile is placed next to another tile in the diagram, the dot patterns must match, black dots next to black dots and white dots next to white dots. These patterns must match on every side that touches another tile, but tiles that touch diagonally do not have to match. For example, the 18 tile could go the left of the 10 tile, since the 18 tile has black dots in its upper- and lower-right corners and the 10 tile has black dots in its upper- and lower-left corners. However, the 18 tile could not go to the right of the 21 tile, since their black and white dots would not match. As you place each tile in the diagram, blacken in the appropriate dots in all corners. It is a good idea to cross off each tile as you use it.

Solution is on page 61.





LOGIC PROBLEM 11

AUTO REPAIRS

by Kevyn Dymond

Last week, Dan, the head mechanic at Dino's Gas Station, serviced one car each day from Monday through Friday. Each of the cars had a different country of origin (one was American), each had license plates from a different state (one had Kansas plates), each was a different color (one was yellow), and each needed a different replacement part (one needed a new gasket). From this information and the following clues, can you determine each car's country of origin, home state, color, replacement part, and day of service?

1. The Italian car had Nevada plates.
2. The car that needed the new oil filter came in the day after the German car, which came in the day after the silver car, which came in the day after the car with Colorado plates.
3. The white car and the car that needed a new fan belt were serviced on consecutive days, in some order.
4. The tan car was serviced the day before the car with Vermont plates.
5. The car from Oregon and the car that needed a new tire were serviced on Monday and Friday, in some order; neither car is British.
6. The red car came in the day after the Japanese car, which came in the day after the car that needed a new air hose.

Solution is on page 63.

See page 7 for directions on how to use the solving chart.

	Colorado	Kansas	Nevada	Oregon	Vermont	red	silver	tan	white	yellow	belt	filter	gasket	hose	tire	Mon.	Tue.	Wed.	Thu.	Fri.
American																				
British																				
German																				
Italian																				
Japanese																				
Monday																				
Tuesday																				
Wednesday																				
Thursday																				
Friday																				
belt																				
filter																				
gasket																				
hose																				
tire																				
red																				
silver																				
tan																				
white																				
yellow																				

LOGIC PROBLEM 12

BALLET SHOES

by Margaret Edmiston

Ballerina Boutique recently had their annual ballet shoe sale, which is always a big success. Though they normally stock a wide variety of ballet shoes, by the last day of their sale, the store was down to shoes in just three different colors and three different sizes. Even so, the four sales clerks on duty managed to sell almost all of the remaining stock. From this information and the following clues, can you determine how many pairs of each size and color each clerk sold?

1. In size 6, Bill sold only blue ballet shoes. In total, he sold five pairs of blue shoes, including two size 8 pairs.
2. Leo sold no blue or pink ballet shoes that were size 8. Of size 6 pairs, he sold the same number of each color.
3. The four salespeople sold a total of six pairs of pink shoes and one pair of size 8 gray shoes.
4. Marie sold four pairs of size 7 shoes, more of size 6 than any other size, and no gray size 6 pairs.
5. Bill sold fewer than ten pairs of shoes, while Louise and Leo each sold ten pairs.
6. Of the size 7 pairs he sold, Bill sold twice as many gray pairs as blue ones, and no pink pairs. However, he did sell at least one pair of pink shoes.
7. Louise sold no pink pairs. In both size 7 and 8, she sold twice as many blue pairs as gray ones.
8. Leo sold four pairs of gray shoes.
9. The four clerks sold a total of forty pairs of ballet shoes that day, including ten pairs of blue shoes in size 6.
10. One salesperson sold exactly one pair of gray shoes in each of the three sizes. Another clerk sold just one pair of gray shoes.
11. One person sold three pairs of blue shoes in each of the three sizes.

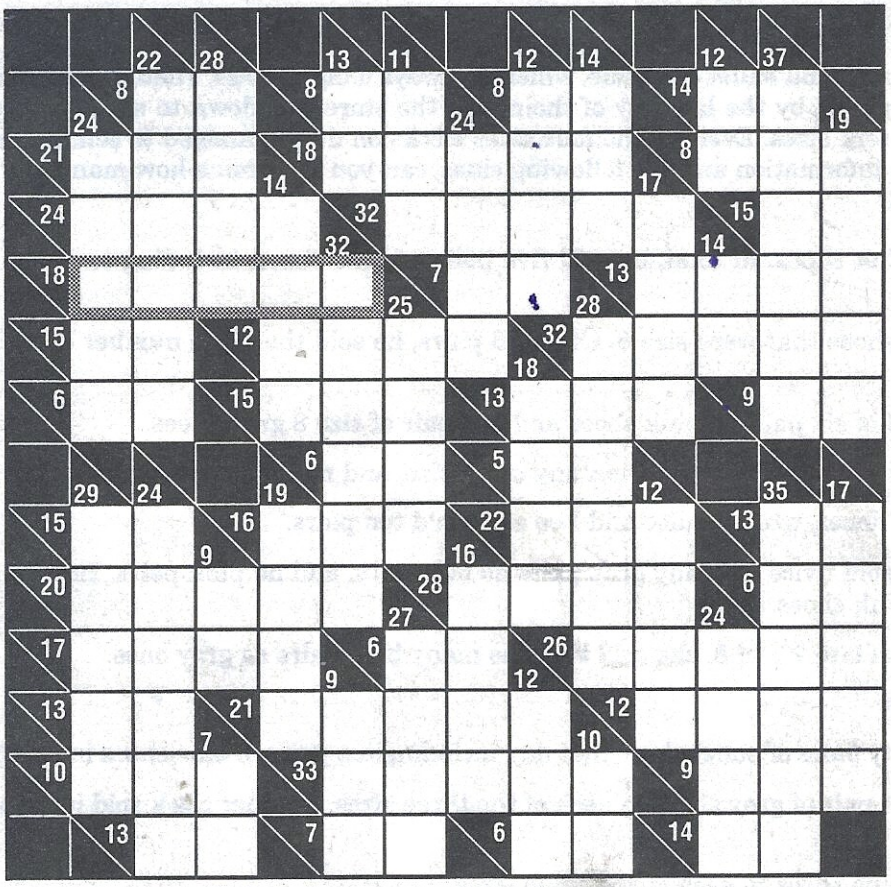
Solution is on page 63.

The shoe table below was found to be most helpful in solving this Logic Problem.

	size 6			size 7			size 8		
	blue	gray	pink	blue	gray	pink	blue	gray	pink
Bill									
Leo									
Louise									
Marie									

CROSS SUMS

17.

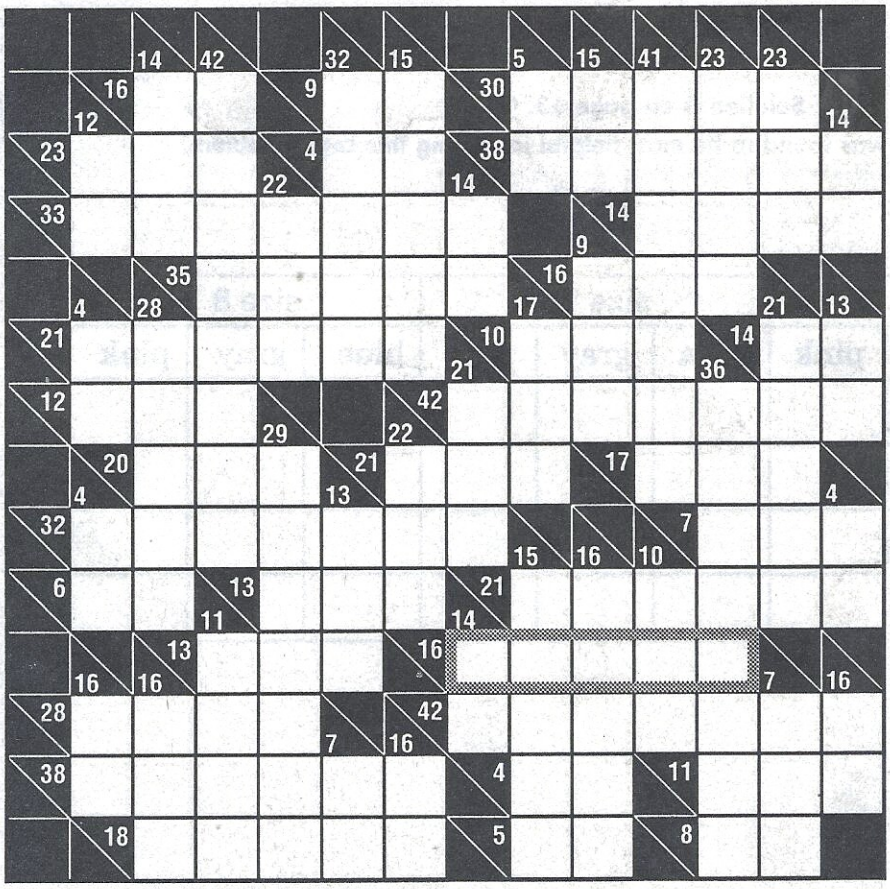


We have outlined one area in each diagram on these two pages. If you need help starting a puzzle, the digit combination to go into that area is listed on page 66.

Solutions are on page 59.

Directions for solving are on page 8.

18.

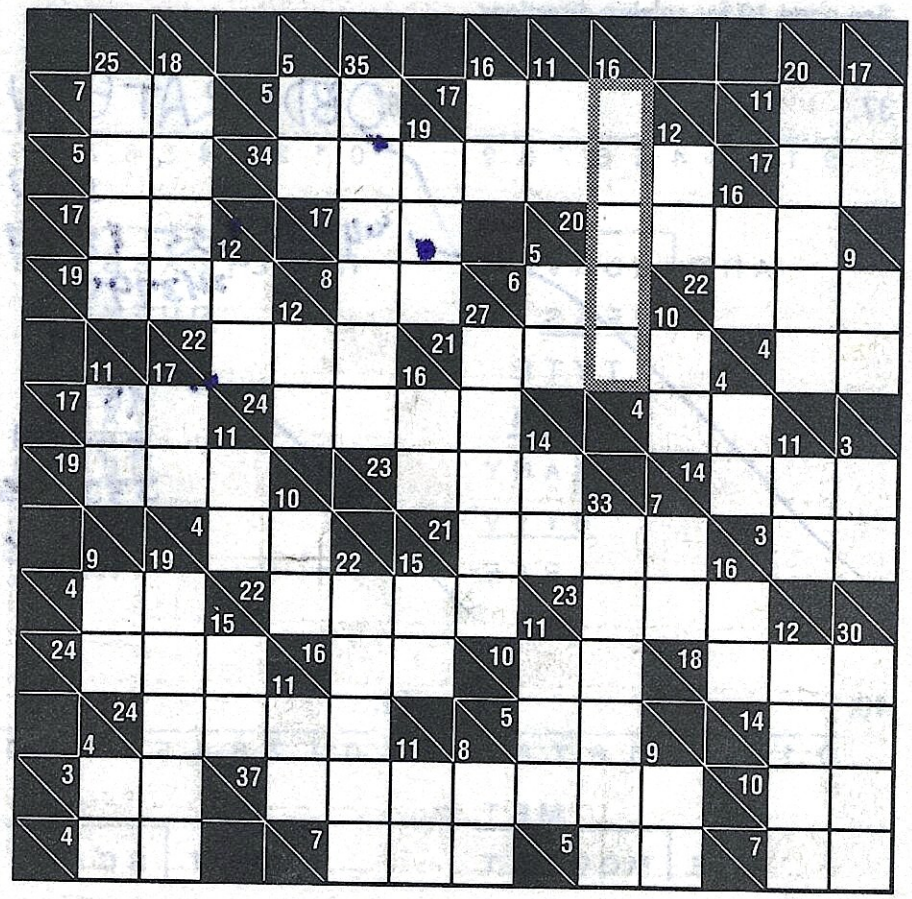


Add more to your total puzzle enjoyment with ***Collector's Series Cross Sums.*** *You'll find over 100 of your favorites. To order, see page 23.*

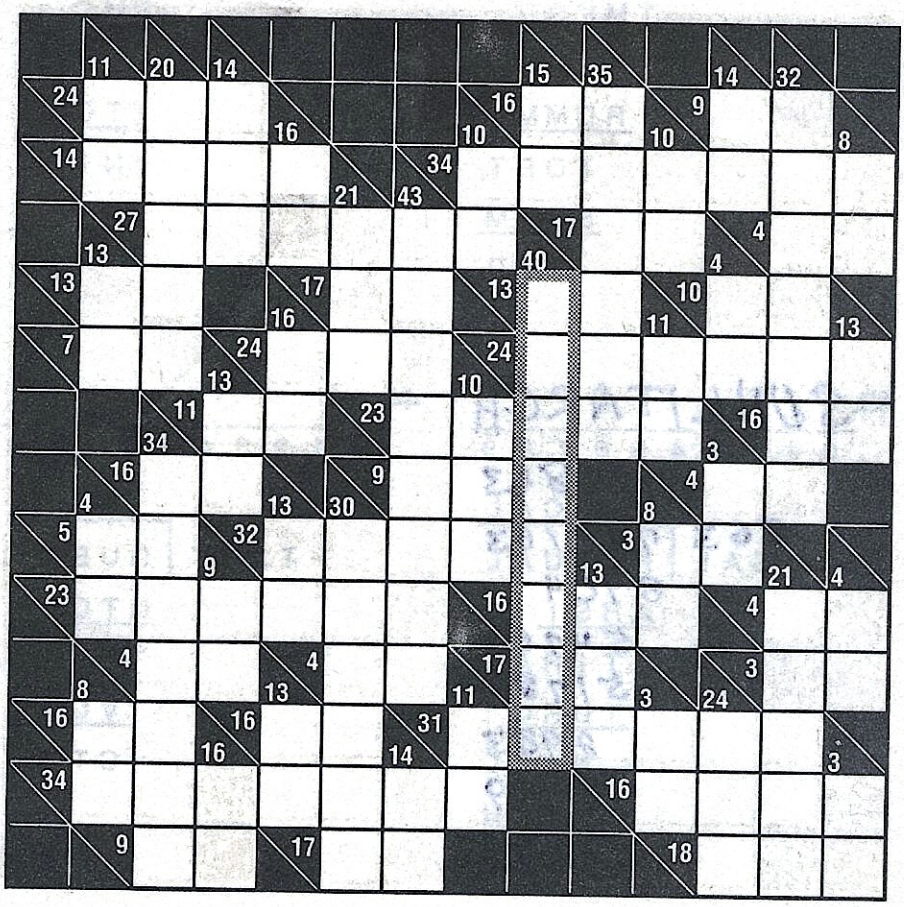
CROSS SUMS

19.

Solutions are on page 59.



20.



WORD ARITHMETIC

See page 10 for solving directions.

Answers are on page 66.

37.

0 1 2 3 4 5 6 7 8 9

```
      YET
ART | SURVEY
      UEAS
       TYTE
       TBRR
        SANY
        SYYV
         SAE
```

38.

0 1 2 3 4 5 6 7 8 9

```
      ADE
REAL | DABBLER
      DUEYO
       BUDLE
        YABT
        UEEBR
        UUUOT
         RROL
```

39.

0 1 2 3 4 5 6 7 8 9

```
      RIB
BUT | TRUNKS
      TULT
       IKUK
        BUT
        UNNS
        ULBA
         BIL
```

40.

0 1 2 3 4 5 6 7 8 9

```
      MET
ERE | MODEST
      TMKS
       KSRS
       RDMM
        TOET
        SRPM
         AKD
```

41.

0 1 2 3 4 5 6 7 8 9

```
      NAP
TOT | SCANT
      SMC
       IYN
       TOT
        NICT
        NINT
         PM
```

42.

0 1 2 3 4 5 6 7 8 9

```
      ADE
BAY | ALFRED
      LRDB
       EEBE
       ELED
        WWYD
        WWLR
         UY
```

43.

0 1 2 3 4 5 6 7 8 9

```
      CAL
CAL | RITUAL
      AHSI
       TIRA
       TURC
        NHCL
        NTCH
         LHI
```

44.

0 1 2 3 4 5 6 7 8 9

```
      IT
TAUT | GUEST
      GTCG
       EVIT
       VCVV
        CTYY
```

45.

0 1 2 3 4 5 6 7 8 9

```
      AT
RAN | SHIP
      RAN
       IUHP
       ITBI
        NNS
```

LOGIC PROBLEM 13

SO BAZAAR

by Randall L. Whipkey

Six entrepreneurial couples (including the Forrests) rent adjacent stalls (arranged numerically as shown in the diagram below) at the Midtown Bazaar. Each stall features a different type of merchandise (one stall features books). Knowing that the wives (including Melanie) all use their husbands' last names, from the clues below, can you deduce each couple's wares and stall?

1. Larry isn't Mr. Aston.
2. Keith and his wife have the stall next to the jewelry sellers.
3. George and his wife have the stall between those of the Carvers and the couple selling clocks.
4. Ian is not Mr. Drake.
5. Mrs. Aston's first name isn't Pamela.
6. The Bensons are not the couple who sell china.
7. James and his wife have a stall adjacent to that of Nancy and her husband.
8. Ian and his wife, who aren't renting stall 5, have the stall between those of Rachel and her husband and the Astons.
9. Olive and her husband have the stall between those of Susan and her husband and the couple selling prints.
10. Larry and his wife have the stall between those of the Edisons and the couple selling coins.
11. Pamela isn't Ian's wife.
12. Nancy isn't Mrs. Benson.
13. Howard and his wife have the stall between those of Pamela and her husband and the Drakes.
14. Larry and Rachel aren't husband and wife.
15. The Carvers' stall isn't next to that of Rachel and her husband.

Solution is on page 63.

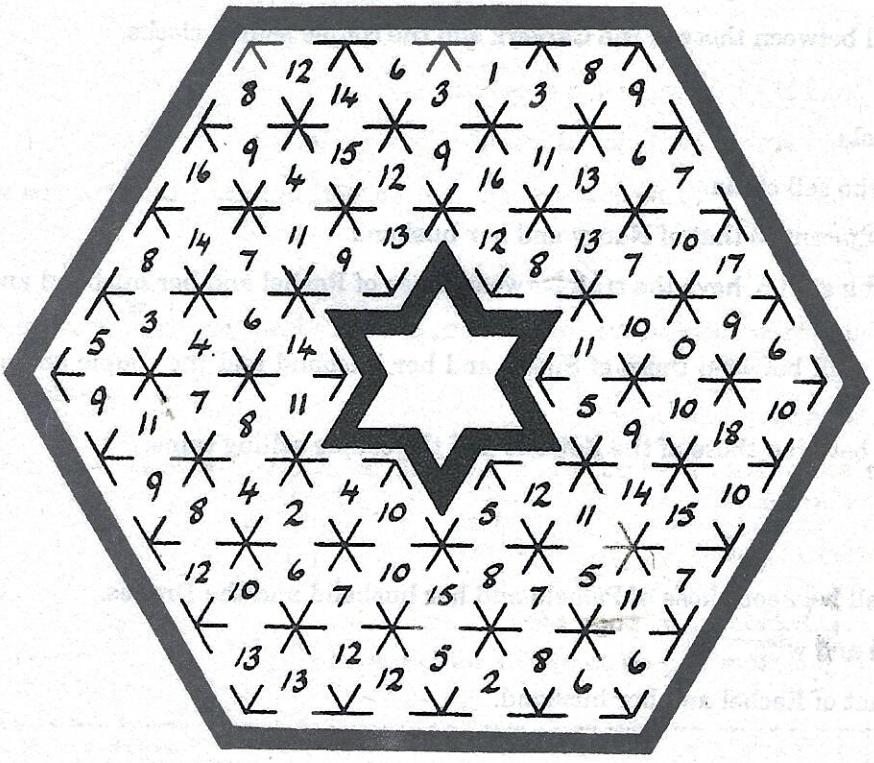
The stall layout below was found to be most helpful in solving this Logic Problem.

	1	2	3	4	5	6
husband						
wife						
last name						
merchandise						

TRIGONS

Trigons will test your powers of logic and deduction. The diagram is made up of a series of open triangles with a number in the center; that number represents the sum of the digits you are to write into the spaces on the sides of the triangles. Where two triangles share a side, they share the number to be written into that side. All the combinations in this Trigons use only the digits 0 through 6. We've listed all the possible combinations for every sum in the small chart, so all you have to do is figure out which of those combinations belongs where (not as easy as it sounds!). The numbers in a combination can go in any order around their triangle, and each combination will be used exactly once. You can begin by filling in 0-0-0 around the triangle with 0 at its center and 6-6-6 around the triangle with 18 at its center. It helps to look for large sums adjacent to small sums, as they will have fewer possibilities for common digits.

Solution is on page 60.



0	000						
1	001						
2	002	011					
3	003	012	111				
4	004	013	022	112			
5	005	014	023	113	122		
6	006	015	024	033	114	123	222
7	016	025	034	115	124	133	223
8	026	035	044	116	125	134	224	233
9	036	045	126	135	144	225	234	333
10	046	055	136	145	226	235	244	334
11	056	146	155	236	245	335	344	
12	066	156	246	255	336	345	444	
13	166	256	346	355	445			
14	266	356	446	455				
15	366	456	555					
16	466	556						
17	566							
18	666							

WHAT'S THE ORDER?

We asked a solver on the street to try to guess a 4-digit number combination; the solver took four guesses, which appear below. In each try, our solver had at least part of the combination correct, as noted by the symbols appearing next to each guess. An "X" next to the combination stands for a correct digit in its correct place in the combination, and an "O" stands for a correct digit out of its correct order. For example, combination A has been given an O and an X, so two of the four digits 9, 3, 4, and 8 appear in the final combination — one in the position given (for example, 9 might be the first digit of the correct combination), and one in a different position (3 might be the last digit of the combination). The placement of the symbols does not correspond to any particular place in the combination. Using the four graded guesses together, and knowing there are no zeros in the combination, can you deduce the correct combination?

Answer is on page 65.

A. 9 3 4 8 OX

B. 1 7 2 6 X

C. 8 3 9 5 OX

D. 1 3 6 2 XX

LOGIC PROBLEM 14

SCALE SCANNERS

by Evelyn B. Rosenthal

Nan and five of her friends joined the Scale Scanners weight-loss program to try and shed some extra pounds. During the program's six-month stretch, the women met each week for low-calorie lunches, during which they discussed their dieting efforts and talked about their growing sons. Each woman has one son in school, and each son attends a different school appropriate for his age. At the end of the six-month period, all the women (including Mrs. Archer) had lost a different number of whole pounds. From this information and the clues below, can you determine each woman's full name and the school her son attends, as well as the number of pounds she lost?

1. Mrs. Eliot's son is younger than Kate's son, who is not the one in graduate school.
2. Only one woman lost more weight than the one whose son goes to college.
3. The woman whose son is in elementary school lost twice as much as Mrs. Dodge.
4. Louise's son is younger than the Farmer boy (who is not the one in high school), but older than the son of the woman who lost the least, three pounds.
5. Olive's son is neither the youngest nor the oldest.
6. Mrs. Berry lost six pounds more than the woman whose son is in junior high school (who isn't May) and twice as much as May.
7. Jane's son isn't the one who attends nursery school.
8. The woman whose son is in high school lost three pounds more than the one whose child is next to youngest, but six pounds less than Mrs. Clark.
9. The Eliot boy doesn't go to elementary school.

Solution is on page 64.

See page 7 for directions on how to use the solving chart.

	Archer	Berry	Clark	Dodge	Eliot	Farmer	son's school: nursery	elem.	jr. high	h.s.	college	grad.	pounds lost					
Jane																		
Kate																		
Louise																		
May																		
Nan																		
Olive																		

pounds lost												

son's school							
nursery							
elem.							
jr. high							
h.s.							
college							
grad.							

CROSSMATH

This looks like a crossword, but it involves numbers, not words. The numbers given in the clues columns are the answers to simple math problems; the numbers you enter into the diagram will form the problems which result in those answers. All the arithmetic symbols (+, −, x, ÷) have already been entered into the appropriate squares in the diagram. Use the symbols, the crossing numbers, and a bit of logic to determine the digit to enter into each blank square (one digit per square). An important thing to remember: The arithmetic is to be done in the order in which it reads, from left to right or top to bottom — for example, 1 + 2 x 3 equals 9 (1 + 2 = 3; 3 x 3 = 9). If done in any other order, your solution won't work. Arithmetic signs at the beginning or end of a problem (as in 11-Across) should be ignored. You will never use zero as the first digit of a number, though there may be zeros used as later digits. There are no negative numbers used here; nor are there any fractions used. If you need help getting started, you'll find the correct entry for 1-Across on page 66. **Solution is on page 61.**

ACROSS

1. 122
5. 684
9. 4
11. 48
13. 219
16. 205
17. 37
18. 18
19. 35
21. 16
23. 100
24. 1205
25. 0
27. 63
28. 3
29. 24
31. 16
32. 32
35. 706
37. 37
38. 434
40. 5
42. 42
43. 4
44. 48
47. 2
48. 8765
50. 17
52. 53
53. 44
54. 5
55. 99
57. 567
60. 60
61. 77
62. 36
63. 107
64. 8

DOWN

1. 6
2. 541
3. 12
4. 737
5. 628
6. 56
7. 2
8. 46
9. 40
10. 345
12. 64
14. 555
15. 160
20. 32
22. 15
23. 23
24. 24
26. 4
30. 381
33. 352
34. 465
36. 2480
39. 27
40. 776
41. 88
45. 33
46. 209
48. 146
49. 72
51. 77
53. 66
56. 4
58. 1
59. 18

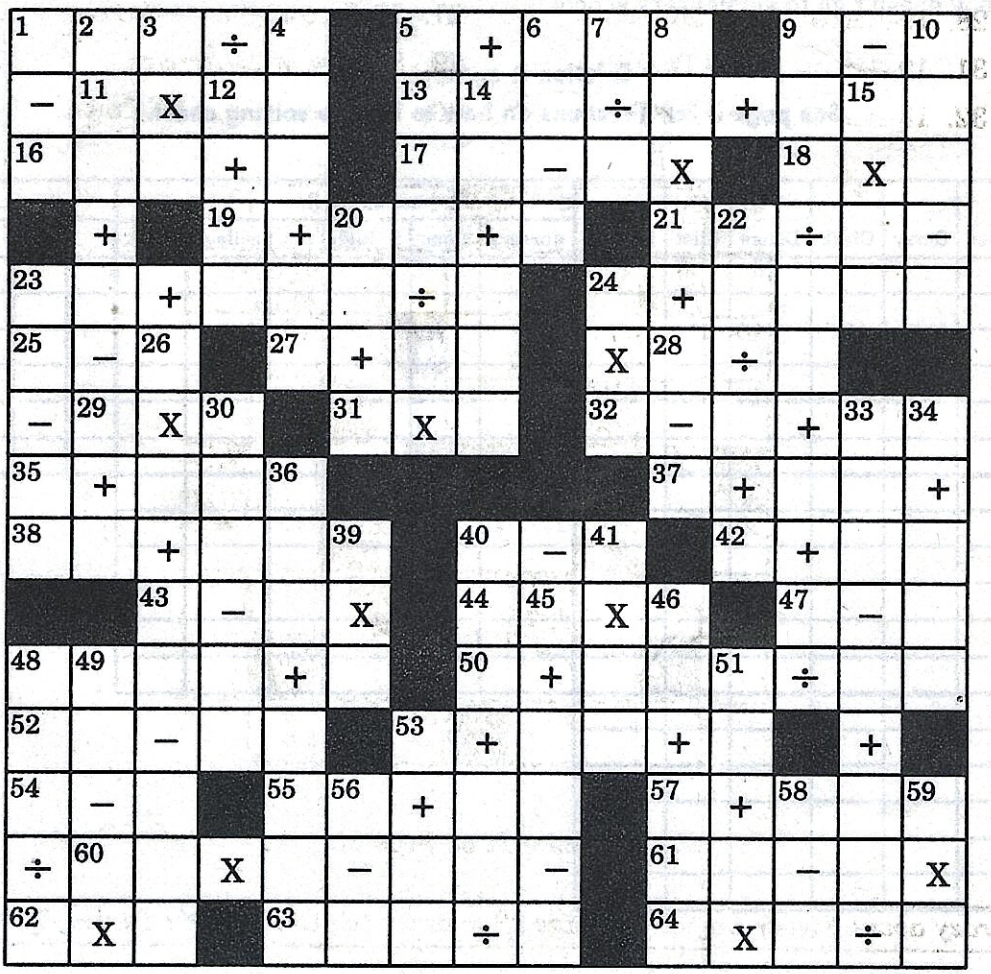


FIGURE LOGIC 9

by Linda Thistle

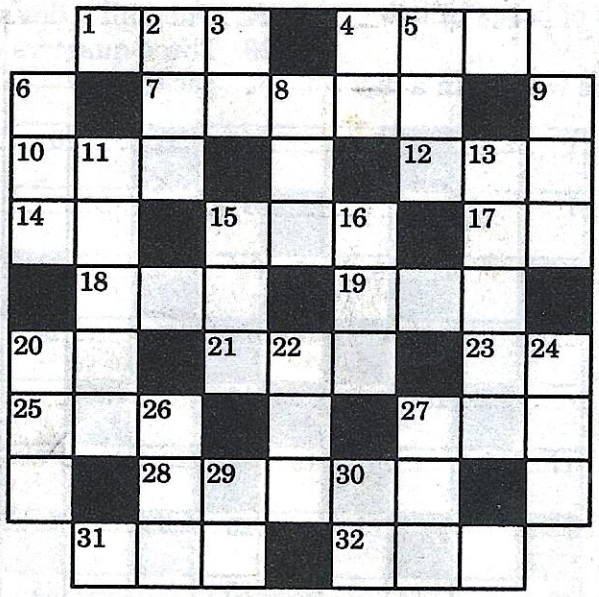
Directions for solving Figure Logics are on page 11. NOTE: In this Figure Logic only, entries may begin with zero, but no entry consists totally of zeros. **If needed, a starting help is on page 66.**

ACROSS

1. 8-Down divided by 17-Across
4. 25-Across plus 2-Down
7. 18-Across times 6-Down
10. 4-Across minus 24-Down
12. 25-Across plus 26-Down
14. 4-Down plus 30-Down
15. 1-Across times 14-Across
17. 23-Across plus 20-Down
18. 6-Down times 29-Down
19. 10-Across times 20-Across
20. 9-Down minus 31-Across
21. 23-Across plus 24-Down
23. One-seventh of 20-Down
25. 15-Down divided by 23-Across
27. 20-Across times 5-Down
28. 19-Across times 26-Down
31. 10-Across plus 6-Down
32. 18-Across minus 22-Down

DOWN

2. 15-Across minus 32-Across
3. 1-Across plus 17-Across
4. 10-Across minus 20-Down
5. 32-Across divided by 23-Across
6. 4-Across divided by 30-Down
8. One-half of 15-Across
9. 2-Down minus 20-Down
11. 25-Across times 8-Down
13. 5-Down times 22-Down
15. 22-Down plus 26-Down
16. 20-Across plus 32-Across
20. Consecutive digits rearranged
22. 23-Across times 31-Across
24. 2-Down plus 26-Down
26. 15-Across divided by 30-Down
27. 12-Across plus 19-Across
29. Square of 23-Across
30. 1-Across minus 29-Down



Solution is on page 60

Crazy about Figure Logic? See page 23 to order the ***Collector's Series Edition!***

FIGURE LOGIC 10

CHALLENGER

On the distant planet of Boogania, the Boogiemon company employs workers to make boogs, a popular tourist item. Each worker makes the same number of boogs each day, and the worker's wage is a standard rate per boog made. The staff works a five-day week. Boogs are sold in packets, with the cost of packeting included in the company's overhead. Boogania's standard currency is silvers and gold, with 100 silvers equaling 1 gold. All monetary amounts mentioned in the clues below are in silvers unless stated otherwise. NOTE: In the clues below, cost = wages plus raw materials, gross profit = selling price minus cost, net profit = gross profit minus overhead, and output = total production by all workers.

Directions for solving Figure Logics are on page 11.

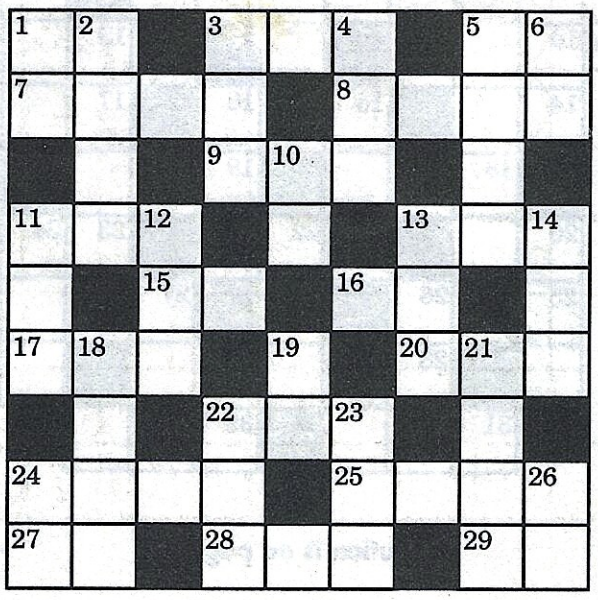
If needed, a starting help is on page 66.

ACROSS

1. Total number of employees
3. Boogs made by one worker in a week
5. Wages paid per boog
7. Cost of fourteen boogs
8. Cost of a packet of boogs
9. One-fourth the selling price of a packet of boogs
11. Gross profit made on one packet
13. Total gross profit per day is this number of golds plus fifty-two silvers
15. Gross profit per boog
16. Number of boogs in two packets
17. Same as 9-Across
20. Eleven less than 11-Down
22. Two-thirds of 11-Down
24. One-third of a week's wages for one worker
25. Total wages for four weeks, in golds
27. Three times the number of employees
28. Output of packets of boogs in two weeks
29. Boogs made by one worker in a day

DOWN

1. Number of boogs in a packet
2. Cost of three packets
3. Boogs made by one worker in six workdays
4. Selling price of a packet is twenty golds plus this number of silvers
5. Output of boogs in two weeks
6. Output of packets of boogs in two days
10. Two times the number of employees
11. Daily output of boogs
12. Overhead per week in golds
13. Cost of raw materials for one boog
14. Wages of one worker for one day
18. Selling price of one week's output, in golds
19. Number of boogs made by one worker in two days
21. Net profit per day
22. One-tenth the selling price of a packet of boogs
23. Boogs made by one worker in four weeks
24. One-half a day's output of packets
26. Three-quarters of a day's output of packets



Solution is on page 60

NUMBER PLACE CHALLENGER

by Walter Mackey

Place a number into every box so that each row across, each column down, each small 16-box square, and each of the two long diagonals (circled) will contain each number from 1 to 16. No number may appear more than once in any row across, in any column down, on either diagonal, or within any small 16-box square. HANDICAP: In each small 16-box square containing circled numbers, the sum of the circled numbers must equal 68, with each of the small box's diagonals equalling 34.

Solution is on page 61.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

○		11	○		15				6	10		○		12	○
	○	○	3		13		11		16		9		○	○	5
12	○	○		6		7		1				11	○	○	13
○	8	13	○	2	12	14				5		○	4	1	○
5				○	4	1	○	○	10		○		14	13	
4			12	16	○	○	7		○	○	8		3		
13	6			9	○	○	15	7	○	○	2				11
11		8		○		10	○	○	14	3	○	16		7	2
	7	1		○		2	○	○		14	○	8		16	
9	14			3	○	○	13	8	○	○	15				10
		6	2		○	○	10		○	○	4		12		15
	10			○	5		○		1	12	○	9		11	
○	9	5	○			12	4				1	○	6	15	○
	○	○	6	11	2					13		14	○	○	3
14	○	○	15				8	11	3			2	○	○	
○	16		○		10	13				15	7	○		5	○

LOGIC PROBLEM 15

CHALLENGER

RAINBOW CONNECTIONS

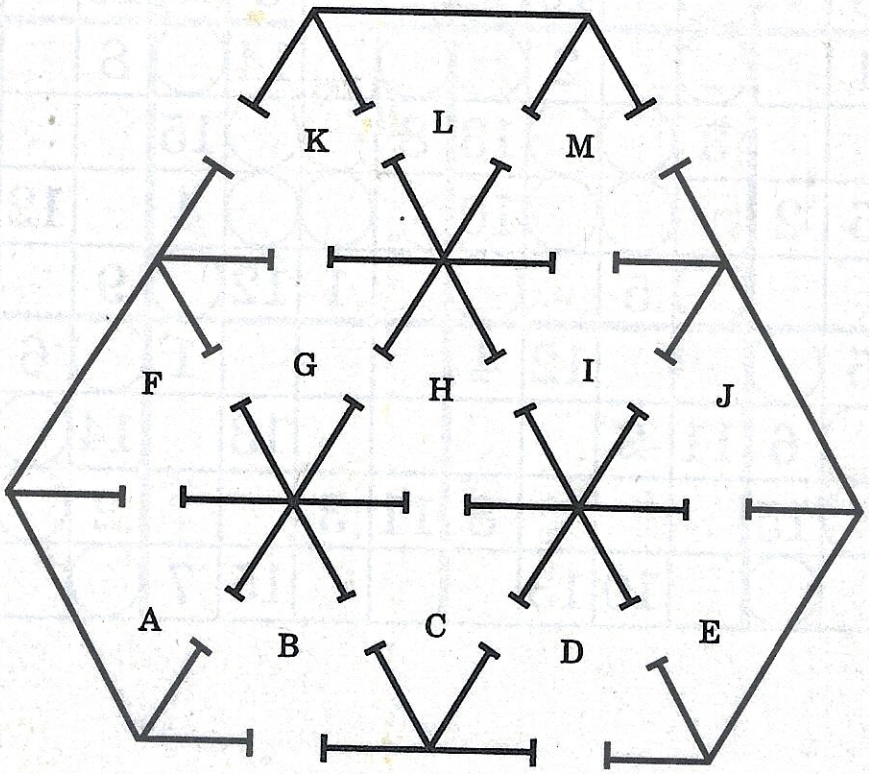
by Kevyn Dymond

Two student painters, Ali and Ben, visited the art museum last weekend to view its renowned international collection. Each of the thirteen rooms in the international section (labeled A through M as seen in the diagram below) features artwork from a different country (one features works from Ghana), and is painted a different color. Both Ali and Ben visited each room exactly once, but each artist took a different path, starting and ending in K, M, B, or D. From this information and the following clues, can you determine each room's featured nation and color, as well as the exact paths Ali and Ben took through the exhibit?

1. The four rooms with outside doorways are, in some order, the Mexico room, the Romania room (which isn't pink), the light blue room, and the dark yellow room.
2. One or both visited the Spain room third and the red room ninth.
3. Ali went directly from the Qatar room to the Zambia room via a doorway not used by Ben.
4. Someone visited the Uruguay room (which isn't one of the four "light" colored rooms) and the Vietnam room consecutively.
5. Room F is either light green or dark green.
6. One or both visited the Japan room second and the pink room seventh.
7. The Peru room was the eighth room visited by both Ali and Ben.
8. One or both visited the Egypt room ninth and the light yellow room twelfth.
9. Someone visited the light blue and dark blue rooms consecutively, someone visited the light green and dark green rooms consecutively, and someone visited the light violet and dark violet rooms consecutively.
10. Someone visited the Nepal room (which isn't yellow) and the silver room consecutively.
11. Ben went from the dark violet room directly into the white room via a doorway not used by Ali.
12. One or both visited the orange room second and the Turkey room tenth.

Solution is on page 64.

The museum's international gallery layout below was found to be most helpful in solving this Logic Problem.



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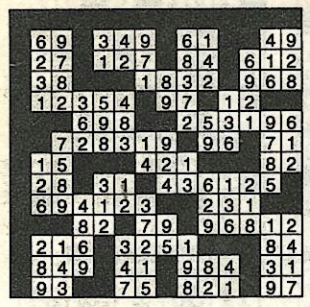

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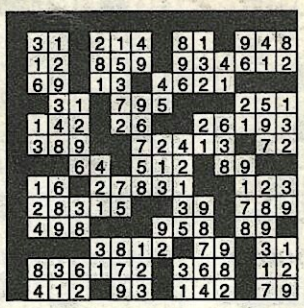

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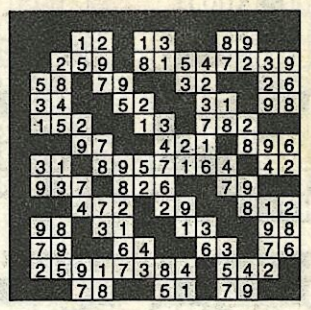

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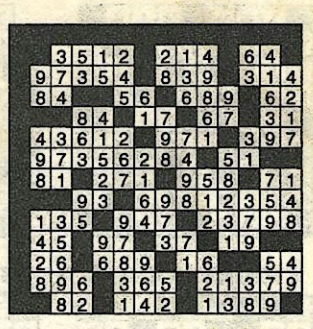

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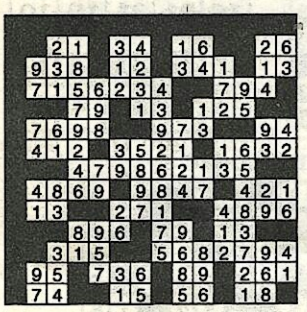

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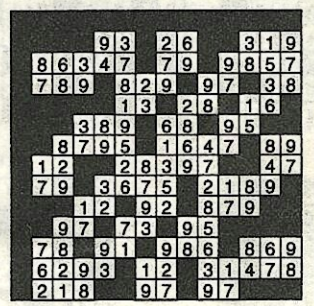

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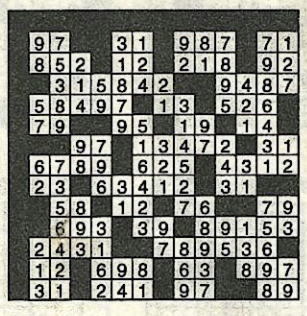

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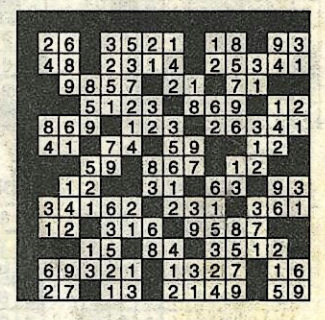

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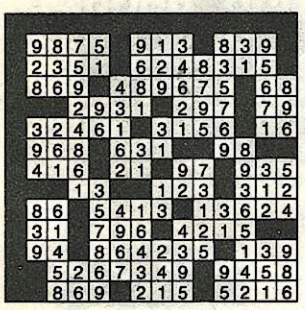

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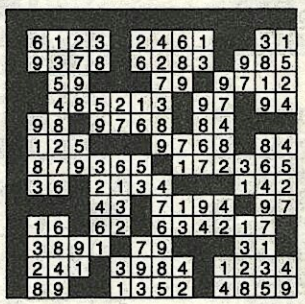

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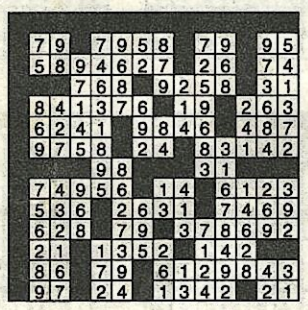

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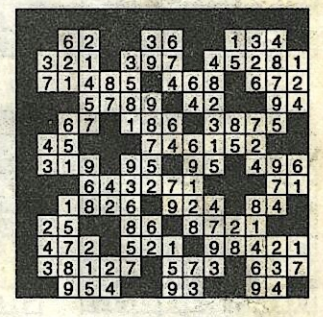

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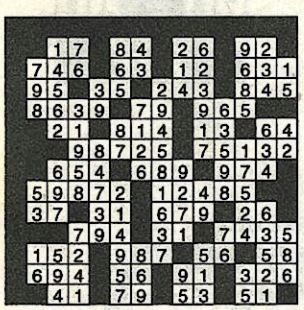

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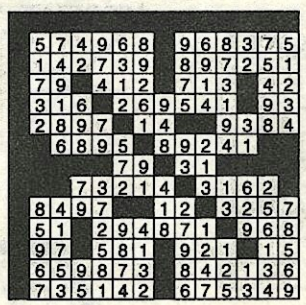

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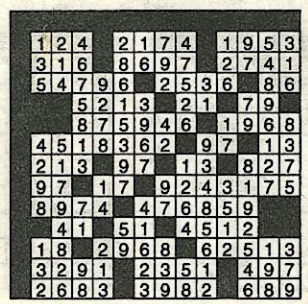

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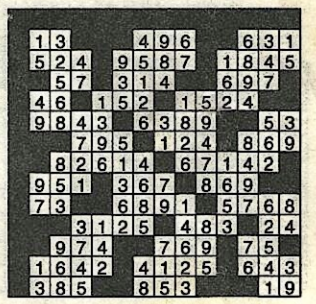

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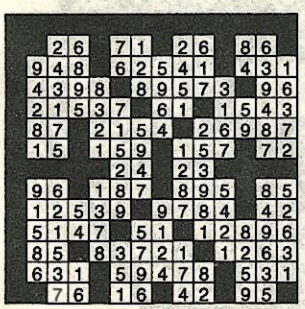

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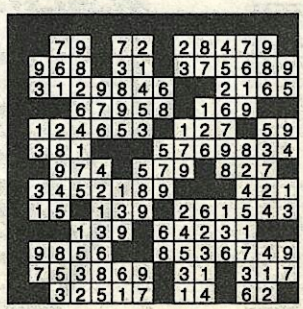

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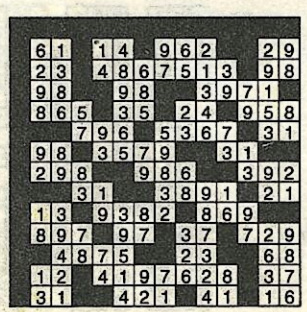

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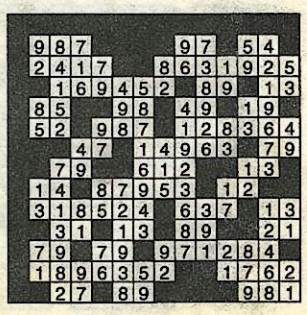

FIGURE LOGIC 1

	1	9	9		2	1	0
2		3	9	6	0	1	1
2	1	5		4		1	1	3
6	8		2	5	5		8	5
	7	6	5		1	7	0	
3	0		6	1	2		1	1
4	0	8		8		1	8	2
0		1	4	4	5	0		1
	8	6	0		5	1	0	

FIGURE LOGIC 2

	7	2	6		2	0	1
3	2		4	2	1		6	9
3			8	2	3			4
	1	2	6		2	1	3	
1	0	2				3	1	3
	5	1	2		1	2	5	
8			3	1	9			4
5	2		7	1	5		5	1
	3	1	6		5	2	3	

FIGURE LOGIC 3

	3	5	8		1	4	9	
1	4		1	1	3		7	7
8		5	6	3	0	4		9
1	8	0		8		6	1	1
	1	6	3		2	5	7	
4	4	9		2		1	9	5
0		3	3	2	2	7		5
8	3		8	3	6		4	2
	5	1	9		3	1	1	

FIGURE LOGIC 4

4	4		2	5	6		1	3
	3	9	7		4	4	3	
2	7	2				4	6	1
1		5	3		2	5		0
			2	7	1			
9		3	5		2	3		8
1	8	0				8	1	9
	4	7	1		1	4	0	
6	8		7	6	8		6	5

FIGURE LOGIC 5

	1	6	2		6		4	0
2	6		1	4	6	3	9	
2		3	9	3		0		1
7	1		5	5	5		2	1
	7	6	8		8	7	0	
3	4		5	4	1		8	1
1		5		5	2	1		9
	7	3	1	9	5		2	2
1	0		5		9	8	0	

FIGURE LOGIC 6

2			7	3		5	6	4
2	2			3	7		9	0
8	7	3		6	4	9	7	
	6	6	1			8	2	8
8		1	2	0	4	7		9
4	4	4			5	2	8	
	3	1	8	2		4	5	6
6	6		3	6			2	3
7	5	6		4	3			8

FIGURE LOGIC 7

5	1	8		3	3	2		2
6	8		6	3	0		8	2
	5	2	0		7	4	0	
1	0		3			4	8	1
8		2	1	5	3	4		4
5	9	2			5		2	8
	6	2	2		8	1	4	
7	2		6	3	9		4	1
4		4	0	7		9	2	5

FIGURE LOGIC 9

	0	1	3		4	1	6	
1		9	7	3	4	4		1
0	6	5		1		3	7	7
4	8		6	2	4		2	4
	9	3	6		3	2	5	
0	5		3	5	4		0	3
2	2	1		0		7	1	5
1		5	0	7	0	0		1
	1	6	9		4	2	9	

FIGURE LOGIC 10

1	6		1	0	5		3	5
2	4	9	2		2	1	3	6
	0		6	3	0		6	
3	8	4		2		1	0	7
3		3	2		2	4		3
6	3	0		4		3	2	5
	5		2	2	4		1	
1	2	2	5		2	3	5	2
4	8		2	8	0		2	1

SUM LOGIC

11	30	2	32	24
44	13	4	23	15
16	31	21	12	19
15	18	31	24	11
13	7	41	8	30

NUMBER PLACE 1

6	7	8	2	4	5	1	9	3
2	9	4	7	1	3	5	8	6
5	3	1	6	9	8	7	2	4
1	2	3	9	6	7	8	4	5
7	4	6	8	5	1	2	3	9
8	5	9	3	2	4	6	7	1
9	8	5	4	7	6	3	1	2
3	1	2	5	8	9	4	6	7
4	6	7	1	3	2	9	5	8

NUMBER PLACE 2

2	5	6	3	1	4	7	8	9
7	3	1	2	8	9	4	5	6
4	9	8	5	7	6	1	2	3
5	6	9	7	4	8	3	1	2
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NUMBER PLACE 3

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FIGURE LOGIC 8

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NUMBER PLACE 4

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NUMBER PLACE 5

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NUMBER PLACE 6

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GO FIGURE!

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2	4	3	

GRIDDIGITS

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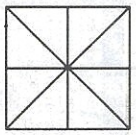

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NUMBER PLACE 8

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NUMBER PLACE 9

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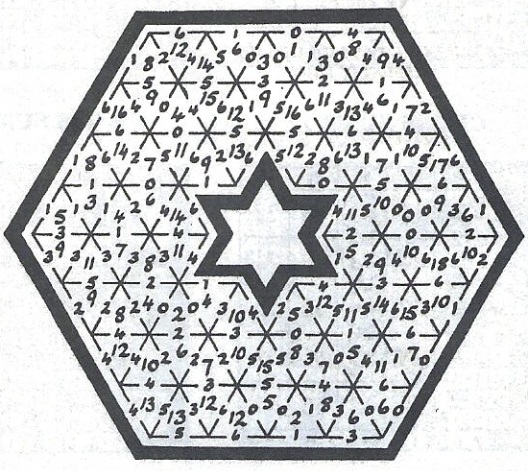
TRIGONS



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KROSS NUMBER 2

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÷	3	0	x	4	−	6	0	−		7	8	−	1	x	
6	x	6		5	3	5	÷	5		6	x	4	÷	3	

NUMBER FILL-IN

| | | | | | | | | | | | | | | |

LOGIC PROBLEM 1

Claudia's pie didn't have the scalloped (clue 1), the feather (clue 3), or the leaf edge (clue 5); it had the braid edge. Beatrice's pie didn't have the scalloped (clue 1) or leaf edge (clue 4), so it had the feather edge. Since Claudia didn't make the pecan (clue 2), blueberry (clue 3), or coconut pie (clue 5), she made the apple pie. The blueberry pie didn't have the feather (clue 3) or leaf edge (clue 5), so it had the scalloped edge. By clue 4, Beatrice didn't bake the pecan pie; she baked the coconut pie. By elimination, the pecan pie had the leaf edge. Since Dorothy didn't bake the pecan pie (clue 2), Abigail did, and Dorothy made the blueberry pie. In summary:

Abigail, pecan pie, leaf edge
Beatrice, coconut pie, feather edge
Claudia, apple pie, braid edge
Dorothy, blueberry pie, scalloped edge

LOGIC PROBLEM 2

The last star profiled wasn't Hector (clue 1), Mark (clue 2), or Guy (clue 4); he was Sylvester. By clue 3, the director and the man with poor diction were first and second, in some order. Since the producer wasn't profiled third or fourth (clue 1), he had poor diction, and the agent and screenwriter were profiled third and fourth, in some order. The agent wasn't Mark (clue 2) or Guy or Hector (clue 4), so he was Sylvester. By elimination, the screenwriter was profiled third. By clue 2, Mark was profiled first and the nasal-sounding man second. Mark, then, was the producer, and the nasal-sounding man was the director. Hector was second and the screenwriter spoke in a monotone (clue 1). By elimination, Guy was the screenwriter and Sylvester used spoonerisms. In summary:

Guy, monotone, screenwriter, third
Hector, nasal voice, director, second
Mark, bad diction, producer, first
Sylvester, spoonerisms, agent, fourth

LOGIC PROBLEM 3

By the introduction, the alto and soprano are women and the tenor and bass are men. The oldest musician isn't Kit (clue 3), Robin (clue 5), or Pat (clue 7); he or she is Chris. Chris isn't the alto (clue 4) or soprano (clue 7), so he's a man. Since Chris isn't the cellist (clue 3), the first violinist (clue 5), or the second violinist (clue 6), he's the violist. The first and second violinists are a man and a woman, in some order (clue 1), so by elimination, the cellist is a woman. The youngest musician isn't Rossov (clue 4), Adamson (clue 5), or Dawson (clue 6); he or she is Gomez. Chris isn't Rossov (clue 4) or Dawson (clue 6), so he's Adamson. Since Gomez isn't the cellist (clue 3) or first violinist (clue 5), he or she is the second violinist. The alto isn't Gomez (clue 2) or Rossov (clue 4); the alto is Dawson. Also by clue 4, Rossov is second oldest and Dawson is third oldest. The soprano is Gomez (clue 7). Dawson, then, is the female cellist and Rossov is the first violinist. By clue 3, Kit is Gomez. Dawson is Robin (clue 5). By elimination, Rossov is Pat. Pat isn't the bass (clue 2); Chris is and Pat is the tenor. In summary:

Chris Adamson, violist, bass, oldest
Kit Gomez, second violinist, soprano, youngest
Pat Rossov, first violinist, tenor, second oldest
Robin Dawson, cellist, alto, third oldest

LOGIC PROBLEM 4

By the introduction, Carla added a teaspoon of the fifth spice instead of the called-for pinch. The recipe called for a quarter cup of ginger (clue 1), and one dash of nutmeg, but Carla used five dashes of nutmeg (clue 2). By clue 3, Carla used twice the recommended amount of the first spice, which wasn't cloves. It also wasn't ginger (clue 1) or allspice (clue 5), so it was cinnamon. By clue 4, Carla added two teaspoons of a spice just after the spice whose recommended amount was one tablespoon and just before the spice whose recommended amount Carla halved. By elimination, nutmeg was used fourth. Cinnamon, then, should have been one tablespoon, two teaspoons of the second spice were used, and Carla should have added twice the amount of the third spice. Carla added two tablespoons of cinnamon (clue 3). By clue 5, the half teaspoon was added third, and should have been one teaspoon. By elimination, ginger was second. Since allspice wasn't third (clue 5), cloves were, and allspice was fifth. In summary:

allspice, 1 pinch, 1 teaspoon, fifth
cinnamon, 1 tablespoon, 2 tablespoons, first
cloves, 1 teaspoon, 1/2 teaspoon, third
ginger, 1/4 cup, 2 teaspoons, second
nutmeg, 1 dash, 5 dashes, fourth

LOGIC PROBLEM 5

By the introduction, meetings were scheduled for Monday, Tuesday, and Wednesday, and the six meeting times were 9:00, 9:30, 10:00, 10:30, 11:00, and 11:30. The 9:30 meeting was the only one scheduled for Tuesday (clue 7). By clue 3, then, Mary's meeting was at 10:00, one of the Monday meetings was at 9:00, and Wilson's meeting was at 11:00. Pam's meeting was on the same day as Mary's (clue 5). By clue 6, no man had a Wednesday meeting, and neither did Sue (clue 1). Since Dr. Liss had a meeting with at least one student each day (introduction), Mary and Pam had Wednesday appointments. Bob was scheduled for 10:30 and Nichols for 11:30, both on Monday (clue 2). By elimination, Pam's meeting was at 11:00. By clue 4, Bob is Truman and Carl is Nichols. Carlson is John (clue 6), so Johnson and Brickston are women. By clue 1, Johnson is Mary and Sue's meeting was on Tuesday. By elimination, Sue is Brickston and John had the 9:00 meeting. In summary:

John Carlson, Monday, 9:00
Bob Truman, Monday, 10:30
Carl Nichols, Monday, 11:30
Sue Brickston, Tuesday, 9:30
Mary Johnson, Wednesday, 10:00
Pam Wilson, Wednesday, 11:00

LOGIC PROBLEM 6

By the introduction, the five boys each selected a sports book and the five girls each selected a mystery. Ella chose "The Locked Room" (clue 1) and Frank selected "A Tennis Problem" (clue 8). By clue 3, Mary is Mrs. Slayton. Nancy and Mike are siblings (clue 1) and their mother is Carolyn (clue 6). Carolyn isn't Roberts (clue 5), North (clue 8), or Hampton (clue 10); she's Kent. By clue 2, Agatha bought "The Lost Key" for her daughter and isn't North. She also isn't Roberts (clue 5), so she's Hampton. Since Agatha's daughter isn't Samantha (clue 5) or Judy (clue 9), she's Bertha. "The Secret Door" wasn't chosen by Judy (clue 4) or Samantha (clue 5); it was Nancy's choice. Mike didn't choose "Soccer Splash" (clue 1), "The Football Story" (clue 4), or "The Baseball Plot" (clue 6), so he chose "Basketball Scoop." By clue 4, Judy is Art's sister. Since she isn't North (clue 2) or Roberts (clue 9), she's Mary Slayton's daughter. By clue 3, Judy didn't choose "The Ticking Clock"; she picked "Outside the Window" and Samantha chose "The Ticking Clock." Ella's mom isn't Dorothy (clue 7), so she's Frances, and Dorothy is Samantha's mom. Since Dorothy's son isn't Phil (also clue 7) or Frank (clue 8), he's Peter. Also by clue 8, Agatha isn't Phil's mom, so she's Frank's. By elimination, Phil's mom is Frances. Phil isn't North (clue 10); he's Roberts, and Peter is North. Since "The Baseball Plot" wasn't Phil's (clue 1) or Art's (clue 3) choice, it was Peter's. By clue 7, Phil didn't choose "A Football Story"; Art did and Phil chose "Soccer Splash." In summary:

Agatha Hampton, Frank, "A Tennis Problem," Bertha, "The Lost Key"
Carolyn Kent, Mike, "Basketball Scoop," Nancy, "The Secret Door"
Dorothy North, Peter, "The Baseball Plot," Samantha, "The Ticking Clock"
Frances Roberts, Phil, "Soccer Splash," Ella, "The Locked Room"
Mary Slayton, Art, "The Football Story," Judy, "Outside the Window"

LOGIC PROBLEM 7

The owl basket doesn't contain the orchids (clue 3), begonias (clue 5), or fuchsia (clue 7). By clue 3, the owl basket and basket of orchids together cost less than Suzanne's purchase. The owl basket, then, doesn't contain ivy (clue 6); it holds the fern. The fern wasn't $19 (clue 4), so the orchids were. The fern, then, cost either $26 or $34. Since the fern cost more than the plant in the auto basket (clue 4), which doesn't contain orchids (clue 1), the fern cost $34, the auto basket plant $26, and Suzanne's plant $55. Tricia's plant cost less than the begonias (clue 5), which cost less than Janet's plant, which cost less than the one in the windmill basket (clue 2); the begonias cost $26, and Tricia bought the orchids. By clue 5, the orchids weren't in the burro basket, so they were in the wishing well basket. Since Andrew didn't buy the auto or burro (clue 1) or owl (clue 4) basket, he got the windmill basket, and spent $48. Janet, then, bought the fern. By clue 7, the fuchsia isn't Andrew's; it's Suzanne's, and Andrew bought the ivy. By elimination, Gerald got the auto basket and Suzanne bought the burro basket. In summary:

Andrew, ivy, windmill, $48
Gerald, begonias, antique auto, $26
Janet, fern, owl, $34
Suzanne, fuchsia, burro, $55
Tricia, orchids, wishing well, $19

LOGIC PROBLEM 8

The customers who bought a birthday card (clue 1) and rented a video (clue 3) are men, and the ones who owned the van (clue 2) and the sedan (clue 5) are women. By elimination, the hatchback and convertible are owned by the men, and the magazine purchaser and phone-call maker are women. By clue 1, the hatchback owner rented the video. By elimination, the card purchaser owns the convertible. The phone-call maker owns the van and didn't park the shortest (clue 5). By elimination, the sedan owner bought the magazine. By clue 4, she parked the shortest amount of time. Lee parked right after Bob and right before the video renter (clue 3), so Bob owns the convertible and Lee is a woman. The van owner was parked 5 minutes less than the first person (clue 2), so Bob was first, Lee second, and the video renter third. Kit, then, rented the video, Pat the sedan owner was fourth, and Lee drives the van (clue 4). By clue 1, Kit parked twice as long as Bob. Lee parked twice as long as Pat (clue 5). By the introduction, each customer parked for a different number of 5-minute increments, and the times totaled 60 minutes. Since Bob parked five minutes longer than Lee (clue 2), Pat parked for 5 minutes, Lee 10, Bob 15, and Kit 30. In summary:

Bob, convertible, buy a birthday card, 15 minutes, first
Kit, hatchback, rent a video, 30 minutes, third
Lee, van, make a phone call, 10 minutes, second
Pat, sedan, buy a magazine, 5 minutes, fourth

LOGIC PROBLEM 9

By clue 3, Julie saw Lady Katherine's ghost and Jill saw another ghost in the garden. The two ghosts spotted Saturday were the one Jane saw and the phosphorescent-painted one (clue 5), and the two on Sunday were Lord Dudley and the one played by the chauffeur (clue 8). By clue 7, Jenny's ghost used dry ice. The only ghost seen Friday appeared in the drawing room (clue 1). By clue 10, then, the dining-room ghost was spotted Saturday and Jill's was seen on Sunday. Jane's ghost wasn't created by the projector (clue 7). By clue 9, Julie's ghost didn't appear in the great hall. By clue 4, the projector was used in the great hall, so it fooled Jackie. By elimination, she saw her ghost on Sunday. Jenny saw her ghost on Friday, and Julie's was the phosphorescent-painted one seen on Saturday (clue 5). By clue 1, since Julie didn't spot her ghost in the library, hers was the dining-room ghost. That ghost was played by the maid (clue 6). By clue 1, then, Jane saw the library ghost who is Prince Arthur. Princess Winifred's ghost was covered with gauze (clue 2); Jill saw her. By elimination, Jane's ghost used the microphone. By clue 4, that ghost was played by the butler. Jill's ghost, then, was played by the chauffeur, and Jackie saw Lord Dudley. By elimination, Jenny saw Queen Mary's ghost, who was played by the cook (clue 2). Jackie's ghost, then, was played by the gardener. In summary:

Jackie, Lord Dudley, great hall, Sunday, gardener, projector
Jane, Prince Arthur, library, Saturday, butler, microphone
Jenny, Queen Mary, drawing room, Friday, cook, dry ice
Jill, Princess Winifred, garden, Sunday, chauffeur, gauze
Julie, Lady Katherine, dining room, Saturday, maid, phosphorescent paint

LOGIC PROBLEM 10

Pam made the white basket (clue 1). By clue 3, Dawn's doll has the striped dress. Sharon made heart cut-outs (clue 7) and Jenny, who isn't Jackson, made the origami box (clue 9). By clue 10, Carly is Perkins and didn't make the origami frog. Since the origami frog-maker made tree cut-outs (clue 4) and Jackson made the apple cut-outs (clue 9), Pam and Dawn made the tree and apple cut-outs, in some order. Jenny and Carly, then, made the bear and moon cut-outs, in some order. Pam's doll doesn't have the checkered (clue 3) or polka-dot dress (clue 5). Pam didn't make the crane (clue 8), so her doll's dress isn't paisley either (clue 6). Pam's doll, then, has the plaid dress. By clue 5, Pam is Torres; she made the tree cut-outs and Dawn made the apple ones. Since O'Reilly made the cube (clue 2), Jenny is Davis. By elimination, Sharon is O'Reilly. By clue 8, Jenny made the red basket. The moon cut-outs were made by the blue-basket maker (clue 4), so Jenny made the bear cut-outs and Carly made the moon cut-outs. By clue 5, Jenny's doll has the polka-dot dress. Dawn didn't make the green basket (clue 3); she made the pink one and, by clue 1, the origami flower. By elimination, Sharon made the green basket and Carly made the origami crane. Sharon's doll has the checkered dress (clue 3), and Carly's doll has the paisley one (clue 6). In summary:

Carly Perkins, blue, crane, paisley, moon
Dawn Jackson, pink, flower, striped, apple
Jenny Davis, red, box, polka-dot, bear
Pam Torres, white, frog, plaid, tree
Sharon O'Reilly, green, cube, checkered, heart

LOGIC PROBLEM 11

The car with Colorado plates, the silver car, the German car, and the car needing an oil filter were serviced on four consecutive days from either Monday through Thursday or Tuesday through Friday (clue 2). By clue 5, then, the Monday car needed the new tire and the Friday car had Oregon plates. The car needing the air hose, the Japanese car, and the red car were serviced consecutively from either Tuesday through Thursday or Wednesday through Friday (clue 6). The cars serviced Wednesday and Thursday, then, were the Japanese and German cars, in some order. By clue 5, the British car wasn't serviced Monday or Friday, so it was serviced Tuesday. Since the Italian car had Nevada plates (clue 1), it was serviced Monday. By elimination, the American car was serviced Friday. The Colorado car, then, was serviced on Tuesday, the silver car on Wednesday, the German car on Thursday, and the car needing a filter on Friday. By elimination, the Japanese car was serviced Wednesday. The British car, then, needed an air hose and the German car is red. By clue 4, the British car is tan and the car with Vermont plates is Japanese. By elimination, the German car has Kansas plates. The American car is white and the German car needed a fan belt (clue 3). By elimination, the Italian car is yellow and the Japanese car needed a gasket. In summary:

American, Oregon, white, oil filter, Friday
British, Colorado, tan, air hose, Tuesday
German, Kansas, red, fan belt, Thursday
Italian, Nevada, yellow, new tire, Monday
Japanese, Vermont, silver, gasket, Wednesday

LOGIC PROBLEM 12

By clue 1, Bill sold only blue shoes in size 6 (at least one pair of them), and a total of five pairs of blue shoes, including two pairs of size 8's. He sold twice as many size 7 grays as size 7 blues, no size 7 pinks, and at least one pair of size 8 pinks (clue 6). By clue 5, since he sold fewer than ten pairs overall, he sold one pair of size 7 blues and two pairs of size 7 grays. By elimination, he sold two pairs of blues in size 6. Only one pair of size 8 grays were sold (clue 3). By clue 7, Louise sold that one pair, along with two pairs of size 8 blues. She also sold one pair each of size 6 and size 7 grays (clue 10). By clue 7, she sold two pairs of size 7 blues and no pink shoes. Louise and Leo each sold a total of ten pairs (clue 5), so Louise sold three pairs of size 6 blues. The clerk who sold three pairs each of size 6, 7, and 8 blues (clue 11) isn't Leo (clue 2); she's Marie. Also by clue 2, Leo didn't sell any size 8 shoes. Leo sold two pairs of size 6 blues (clue 9), and two pairs each of size 6 grays and size 6 pinks (clue 2). By clue 8, he also sold two pairs of size 7 grays. The person who sold just one gray pair (clue 10), then, is Marie. By clue 4, since she didn't sell size 6 grays, she sold a pair in size 7. The four clerks sold a total of forty pairs (clue 9). By clue 4, Marie sold more of size 6 than any other, so she sold two pairs of size 6 pinks and no other pinks for a total of twelve pairs. Bill, then, sold one pair of size 8 pinks for a total of eight pairs. By clue 3, a total of six pink pairs were sold, so Leo sold one pair of size 7 pinks. By elimination, he also sold a pair of size 7 blues. In summary:

Bill, Size 6: 2 blues; Size 7: 1 blue, 2 grays; Size 8: 2 blues, 1 pink
Leo, Size 6: 2 blues, 2 grays, 2 pinks; Size 7: 1 blue, 2 grays, 1 pink
Louise, Size 6: 3 blues, 1 gray; Size 7: 2 blues, 1 gray; Size 8: 2 blues, 1 gray
Marie, Size 6: 3 blues, 2 pinks; Size 7: 3 blues, 1 gray; Size 8: 3 blues

LOGIC PROBLEM 13

Stalls 1 and 6 aren't George's (clue 3), Ian's (clue 8), Larry's (clue 10), or Howard's (clue 13); they're Keith's and James's, in some order. Larry isn't Aston (clue 1) and isn't married to Rachel (clue 14). By clue 8, then, his stall isn't next to Ian's. Ian isn't Drake (clue 4) and isn't married to Pamela (clue 11), so by clue 13, his stall isn't next to Howard's. Ian, then, is between George and one of the end stalls. Since Ian doesn't have stall 5 (clue 8), he has stall 2, and George has stall 3. George's stall is next to the Carvers' (clue 3), and Ian's is next to Rachel's (clue 8). By clue 15, the Carvers' stall isn't next to Rachel's, so Ian isn't Carver and George isn't married to Rachel. Rachel, then, has stall 1, and the Carvers have stall 4. Ian sells clocks (clue 3). By clue 8, George is Aston. Pamela isn't George's wife (clue 5). By clue 13, then, Howard has stall 5, Pamela is Carver, and the Drakes have stall 6. By elimination, Larry is Pamela's husband. Howard is Edison and George sells coins (clue 10). By clue 2, Keith has stall 6 and Howard sells jewelry. James, then, is Rachel's husband. By clue 7, Nancy is Ian's wife. Olive is Howard's wife, Susan is Keith's wife, and the Carvers sell prints (clue 9). By elimination, George's wife is Melanie. By clue 12, Nancy and Ian aren't the Bensons; they're the Forrests, and James and Rachel are the Bensons. Since the Bensons don't sell china (clue 6), they sell books and the Drakes sell china. In summary:

George and Melanie Aston, coins, 3
Howard and Olive Edison, jewelry, 5
Ian and Nancy Forrest, clocks, 2
James and Rachel Benson, books, 1
Keith and Susan Drake, china, 6
Larry and Pamela Carver, prints, 4

LOGIC PROBLEM 14

The woman with the son in college lost the second most weight (clue 2). By clue 4, the woman who lost the least weight lost three pounds, and her son isn't in grad school. He also isn't in elementary (clue 3) or high school (clue 8). Since all weight losses were in whole pounds (introduction), he's not in junior high (clue 6). He, then, is in nursery school. The woman who lost the most doesn't have the son in junior high (clue 6), high school or elementary (clue 8), so he's in grad school. The woman who lost the least weight isn't Kate (clue 1), Louise (clue 4), Olive (clue 5), or Jane (clue 7); she's May or Nan. If she were May, by clue 6, the woman with the son in junior high would have lost no weight at all. This, however, contradicts the introduction, which states that all the women lost weight. Therefore, the woman who lost the least isn't May; she's Nan. Since the grad school mom isn't Kate (clue 1), Louise (clue 4), Olive (clue 5), or May (clue 6), she's Jane. By clue 8, the high school mom lost three pounds more than the elementary mom, and Clark lost nine pounds more than the elementary mom. The elementary mom lost twice as much as Dodge (clue 3), so Dodge's son is in junior high or nursery school. By clue 6, Mrs. Berry lost six pounds more than the junior high mom (who isn't May) and twice as much as May. If Dodge's son were in junior high, Mrs. Dodge would have lost a minimum of four pounds. Mrs. Dodge wouldn't have lost four pounds or more, however, without resulting in either more than six different weight loss amounts, less than six different weight loss amounts, or a fractional weight loss amount for May. Any of these three scenarios contradicts the introduction. Therefore, Mrs. Dodge's son isn't in junior high; he's in nursery school. The elementary schooler's mom, then, lost six pounds, the high schooler's mom lost nine pounds, and Clark lost fifteen pounds. Since the elementary mom isn't Farmer (clue 4), Berry (clue 6), or Eliot (clue 9), she's Archer. The high school boy is neither Farmer (clue 4) nor Berry (clue 6), so he's Eliot. By clue 1, Kate's son goes to college. By clue 6, the junior high boy's mom isn't Clark, and Mrs. Berry's son is either in college or grad school. Mrs. Farmer, then, is the junior high boy's mom. She's Olive and Louise's son is in elementary (clue 4). May's son, then, is in high school, Mrs. Berry lost eighteen pounds and Olive lost twelve pounds. By elimination, Jane is Berry and Kate is Clark. In summary:

Jane Berry, grad school, 18 lbs.
Kate Clark, college, 15 lbs.
Louise Archer, elementary school, 6 lbs.
May Eliot, high school, 9 lbs.
Nan Dodge, nursery school, 3 lbs.
Olive Farmer, junior high, 12 lbs.

LOGIC PROBLEM 15

By the introduction, Ali and Ben visited each of the thirteen rooms exactly once. The only paths beginning and ending with outside doorways are KLMIJEDCHGFAB, BAFGHCDEJIMLK, MLKGFABCHIJED, and DEJIHCBAFGKLM. Since Ali and Ben took different paths (introduction) and both visited the Peru room eighth (clue 7), the two took KLMIJEDCHGFAB and MLKGFABCHIJED, in some order, and the Peru room is C. Both visited room H ninth, so it's red (clue 2), and is the Egypt room (clue 8). Both also visited room L second; it's the Japan room (clue 6) and it's orange (clue 12). By clue 1, B, D, K, and M are, in some order, the Mexico room, the Romania room (which isn't pink), the light blue room, and the dark yellow room. The pink room visited by someone seventh (clue 6), which is either B or D, is Mexico (clue 1). The other student, then, visited it thirteenth. By clue 3, since Ali went directly from the Qatar room to the Zambia room via a doorway not used by Ben, she went to the Qatar room third and the Zambia room fourth. Ben, then, went to the Qatar room first and the Zambia room tenth. The Turkey room was Ali's tenth room and Ben's fourth (clue 12). Rooms G and I, then, are Turkey and Zambia, in some order. By clue 2, the Spain room was Ben's third room and Ali's first, so rooms K and M are Qatar and Spain, in some order, and dark yellow and light blue, in some order (clue 1). The Romania room is either B or D, and was visited seventh and thirteenth. Ben visited the dark violet room seventh and the white room eighth (clue 11); the dark violet room is the Romania one, and C is white. Ali, then, visited the Mexico room seventh and the Romania one thirteenth, and Ben visited the Mexico room thirteenth. Since someone visited the light yellow room twelfth (clue 8), and the light violet and dark violet rooms were visited consecutively (clue 9), the light yellow and light violet rooms are A and E, in some order. By clue 5, room F is either light green or dark green. The two green rooms were visited consecutively (clue 9), so G is also green. By elimination, rooms I and J are dark blue and silver, in some order. By clue 9, the two blue rooms were visited consecutively; M is the light blue room, I is the dark blue room, K is the dark yellow room, and J is the silver room. Since the Nepal room and room J were visited consecutively (clue 10), the Nepal room is E. Also by clue 10, the Nepal room isn't yellow, so it's light violet. Room A, then, is light yellow, and room D is dark violet (clue 9). By elimination, room B is pink. The Uruguay and Vietnam rooms were visited consecutively (clue 4), so they're F and A, in some order. By elimination, J is the Ghana room. By clue 4, since the Uruguay room isn't light colored, the Vietnam room is A and the Uruguay room is F. Uruguay, then, is dark green and room G is light green. Ali visited room D last, so she took path MLKGFABCHIJED, and the Spain room is M, the Qatar room is K, the Zambia room is G, and the Turkey room is I. Ben, then, took path KLMIJEDCHGFAB.

In summary:

A, Vietnam, light yellow
B, Mexico, pink
C, Peru, white
D, Romania, dark violet
E, Nepal, light violet
F, Uruguay, dark green
G, Zambia, light green
H, Egypt, red
I, Turkey, dark blue
J, Ghana, silver
K, Qatar, dark yellow
L, Japan, orange
M, Spain, light blue
Ali's path: MLKGFABCHIJED
Ben's path: KLMIJEDCHGFAB

LETTER FROM THE EDITORS

From the erroneous Table of Contents, Bingo Arithmetic 10 – 18 matches Word Plays 1, Bingo Sums 3 & 4 matches Cross Plays 2, Collector's Arithmetic 1 – 9 matches Word Series Ad, Cross Editors matches Letter from the Sums 11 & 12, and Figure Problem 4 matches Logic Logics 2 & 3. Kross Sums 5 & 6 matches Cross Numbers 1 & 2, so All Sums 9 & 10 matches Cross in a Row. By clue 1, Number Fill-In is on page 6; Figure Fill-In's match is Number Logic 4, and Number Logic 1 matches Figure Place 1 – 9. Since Cross Problem 3 and Cross Problem 6 matches Logic Sums 1 & 2 and Logic Sums 7 & 8, in some order, the correct titles are Logic Problem 3, Logic Problem 6, Cross Sums 1 & 2, and Cross Sums 7 & 8. By the introduction, which states that puzzles are numbered in ascending page order, Cross Problem 3 matches Logic Sums 7 & 8 and Cross Problem 6 matches Logic Sums 1 & 2. The only two puzzles titles that can be jumbled to result in the words "Logic Problem" are two Logic Problems, so Logic Problem 1 matches Logic Problem 7, and Logic Problem 2 matches Logic Problem 5. The correct title matches, then, whose page numbers when added together equal 33, are Bingo Plays 1 and Word Arithmetic 10 – 19, Bingo Plays 2 and Cross Sums 3 & 4, Collector's Series Ad and Word Arithmetic 1 – 9, Letter from the Editor and Cross Sums 11 & 12, Figure Logics 2 & 3 and Logic Problem 4, Kross Numbers 1 & 2 and Cross Sums 5 & 6, All In A Row & Cross Sums 9 & 10, Number Fill-In and Figure Logic 4, Number Place 1 – 9 and Figure Logic 1, Cross Sums 7 & 8 and Logic Problem 3, Cross Sums 1 & 2 and Logic Problem 6, Logic Problem 1 and Logic Problem 7, and Logic Problem 2 and Logic Problem 5. By the introduction, Letter from the Editor is on page 4; Cross Sums 11 & 12 are on 29. Since Number Fill-In is on 6 and Collector's Series ad is on 23 (clue 1), Figure Logic 4 is on 27 and Word Arithmetic 1 – 9 are on 10. By clue 3, Cross Sums 9 & 10 are on 28 and All In A Row is on 5. Word Arithmetic 10 – 18 are on 20 (clue 4), so Bingo Plays 1 is on 13. By clue 5, Logic Problems 6 and 7 are on consecutive pages; Logic Problem 1 is followed directly by Cross Sums 1 & 2, which is followed by Cross Sums 3 & 4. Logic Problem 6, then, is directly preceded by Bingo Plays 2. The only consecutive pages left are 7 – 9, 14 – 19, and 24 – 26. By the matches to Logic Problems 1 through 7, the pages with Logic Problems 2, 3, 4, 5, Figure Logics 2 & 3, and Cross Sums 7 & 8 come before Bingo Plays 2. Logic Problem 1, then, isn't on 14 or above, so it's on 7, Cross Sums 1 & 2 are on 8, Cross Sums 3 & 4 are on 9, Bingo Plays 2 is on 24, Logic Problem 6 is on 25, and Logic Problem 7 is on 26. Since the adjacent puzzle headings on 16 and 17 are matches, they're not Cross Sums 5 & 6 or 7 & 8, or their matches, Kross Numbers 1 & 2 and Logic Problem 3, and they're not Logic Problems 2 or 5. By clue 2, Figure Logic 1 isn't on either of those pages; neither is Number Place 1 – 9. The puzzles on 16 and 17, then, are Logic Problem 4 and Figure Logics 2 & 3, in some order. By clue 2, Figure Logic 1 is on 11, Logic Problem 2 is on 12, Logic Problem 4 is on 16, Figure Logics 2 & 3 are on 17, Logic Problem 5 is on 21, and Number Place 1 – 9 is on 22. Logic Problem 3 isn't on 15 (clue 5), so it's on 14 and Cross Sums 7 & 8 are on 19. Cross Sums 5 & 6, then, are on 18 and Kross Numbers 1 & 2 are on 15. For an answer summary, turn to page 3 for the Table of Contents.

MINUTE MATH

1. 88%. The student missed 1/5 of the first 25 questions, so he got 20 correct. Of the next 50, he got 45 correct (.90 x 50). Of the final 25, he answered 23 correctly. The total number answered correctly, then, is 88 (20 + 45 + 23) of 100, or 88%. 2. Q = 1, B = 2, R = 4. Q x QB = QB, so Q = 1. Since B + B = R and B x B = R, and B and R are two different digits, B = 2 and R = 4. 3. 19/52, or 36.5%. Thirteen of the 52 cards are hearts, including one king and one ace. The remaining cards include three kings and three aces, so the probability of drawing a heart, king, or ace is 13 + 3 + 3, or 19, out of 52. 4. $2.70 per pound. 40 pounds of the chocolate candies at the current rate of $3.00/lb. sell for $120, and 60 pounds of the peanut-butter candies at the current rate of $2.50/lb. sell for $150, so at current prices, 100 pounds of the mixture would sell for $270. $270 divided by 100 pounds equals $2.70.

WHAT'S THE ORDER?

Combinations B and C contain all the digits except 4, but have only three correct digits between them. 4, then, is one of the answer digits. Neither C nor D contains 4, so the two combinations share a correct digit. The only digit shared by C and D is 3, which by D, is the second digit. By B, 7 is not in the answer. Both B and D combinations contain digits 1, 2, and 6, one of which is a correctly placed answer digit. Since the positions of both 2 and 6 differ in the B and D combinations, 1 is the first digit and 2 and 6 aren't in the answer. By A, 8 and 9 aren't in the answer, and 4 is the fourth digit. By elimination, 5 is the third digit. The answer, then, is 1354.

CIRCLE MATH

A = 6; B = 2; C = 4; D = 5; E = 8; F = 3; G = 1; H = 9; I = 7.

HALF TIME

The diagram consists of 192 squares. One half of 192 is 96. There are 25 shaded squares, so the numbered areas to be shaded in must total 71. The only combination of areas that totals 71 is #1, #2, #6, and #8 (24 + 13 + 21 1/2 + 12 1/2 = 71).

TWO-PART MATH

A.

```
  5 7 6 8
      x 2 3
-----------
  1 7 3 0 4
1 1 5 3 6
-----------
1 3 2 6 6 4
```

B.

```
  3 9 7
+ 8 6 5
-------
1 2 6 2
```

ALL IN A ROW

Row A. There are 7 groups in row A: 16437, 64371, 437133, 33294, 948, 158124, and 777. There are 6 groups in row B: 948, 15951, 9516, 2595, 33384, and 42663. There are 5 groups in row C: 72381, 3819, 1965, 5961, and 9714.

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FIGURE LOGIC HELPS

1. By clue 3-Down, 23-Across is 11.
2. 16-Across is at least 100 and at most 107 (clue 9-Down). By 16-Across, 16-Across is 102.
3. 12-Across's last digit is 0 (clue 14-Across). By clue 5-Down, 5-Down's first and last digits are 1. By clue 12-Across, 3-Down's last digit is 0. 7-Down's last digit is 8 (clue 3-Down). By clue 7-Down, then, 21-Down's last digit is 2. 5-Across is 14 (clue 5-Across).
4. By clue 7-Down, 14-Down's last digit isn't 0. 14-Down's last digit is 5, and so is 31-Across's (clue 14-Down). By clue 5-Across, 5-Across's first digit is 1 and its last digit is odd. 5-Across, then, is 11 or 13 (clue 17-Down). By clue 13-Across, 25-Down is even. 5-Across, then, is 13 (clue 5-Across).
5. By clue 5-Across, 28-Across's last digit is 0. 25-Across has different odd digits (clue 25-Across). By clue 6-Across, since 6-Across is one-fifth of 25-Across, 25-Across's last digit is 5, its first digit is 7 or 9, and 7-Down's first digit is at least 4. 7-Down's first digit is less than 5 (clue 7-Down), so 7-Down's first digit is 4 and 25-Across's first digit is 7. 25-Down, then, is 70.
6. 17-Down is 11, 12, 13, or 14 (clue 20-Down). By clue 17-Down, then, 17-Down is 12.
7. 1-Down has consecutive digits in ascending order (clue 1-Down). By clue 19-Across, then, 1-Down is 34, 56, or 78, and 19-Across is 17, 28, or 39. 19-Across is 28 and 1-Down is 56 (clue 6-Across).
8. By clue 48-Down, 48-Down is odd. 35-Across's last digit, then, is odd (clue 35-Across). By clue 10-Down, 10-Down is 234567 or 456789. 29-Across, then, is 16 or 36, and 10-Down is 234567.
9. 20-Down's first digit is 0 (clue 17-Across), so by clue 20-Down, 20-Down is 021.
10. By clue 4-Down, 4-Down is the selling price, in silvers, of a packet, minus twenty golds (2,000 silvers). The last digit of 4-Down is 0 (clue 22-Down). By clue 3-Across, the last digit of 3-Across is 5. 8-Across is a 4-digit number, as is 2-Down, so by clue 2-Down, the first digit of 8-Across is 1, 2, or 3. By clue 9-Across, 4-Down is 520.

CROSS SUMS HELPS

#1: 3251	#11: 427
#2: 4621	#12: 5789
#3: 895	#13: 98725
#4: 371	#14: 842136
#5: 5897	#15: 5213
#6: 86347	#16: 6389
#7: 625	#17: 21537
#8: 1327	#18: 64231
#9: 129	#19: 21346
#10: 793	#20: 41923687

KROSS NUMBER HELPS

#1: 865345 #2: 678759

CROSSMATH HELP

1-Across is 854 ÷ 7.

WORD ARITHMETIC

0 1 2 3 4 5 6 7 8 9

1. A/SHIPWRECK
2. BIG/FACTORY
3. BOAT/PRICES
4. EQUITY/LOAN
5. MURPHY'S/LAW
6. TRY/NEW/FADS
7. PESKY/CHILD
8. CENTIGRAMS
9. BREAKS/DOWN
10. DISCOURAGE
11. SECOND/HALF
12. EXHAUSTING
13. DISPATCHER
14. SHREWD/PLAN
15. PRIVATE/BUS
16. QUICK/FROGS
17. TEAK/PODIUM
18. MUSICAL/TOY
19. JOYFUL/GENT
20. FOB/WATCHES
21. ZEBRA/FINCH
    (Australian bird)
22. FOURTH/DESK
23. WALNUT/PIES
24. THIS/PARCEL
25. COBALT/MINE
26. PAIR/OF/TENS
27. BAD/MONSTER
28. DRY/THE/FIGS
29. NERVOUS/CAT
30. CRAZY/QUILT
31. ISLAND/HOME
32. BROADLY/PUT
33. THORN/SPIKE
34. FIVE/QUARTS
35. BUMPY/RIDES
36. VISUAL/CODE
37. BUSY/TAVERN
38. OBDURATELY
    (stubbornly)
39. SILK/TURBAN
40. POSTMARKED
41. MANY/TOPICS
42. FLAWED/RUBY
43. SUNLIT/ARCH
44. ACTIVE/GUYS
45. PAINTBRUSH

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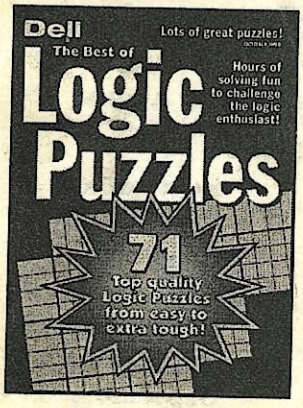
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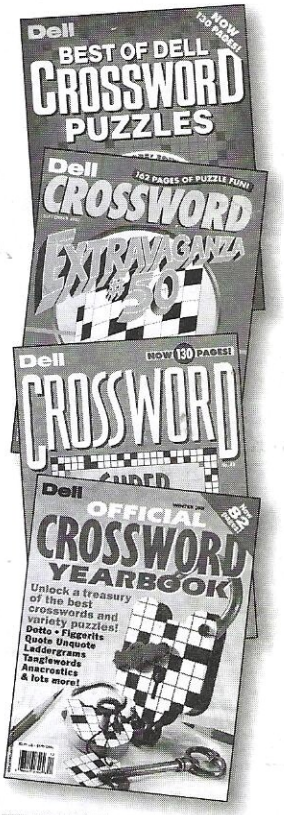

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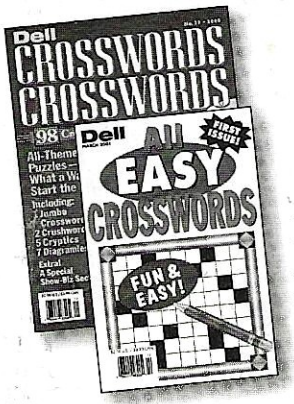

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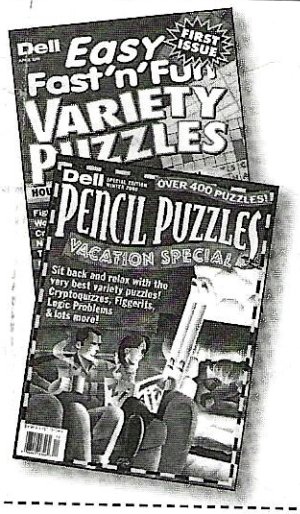

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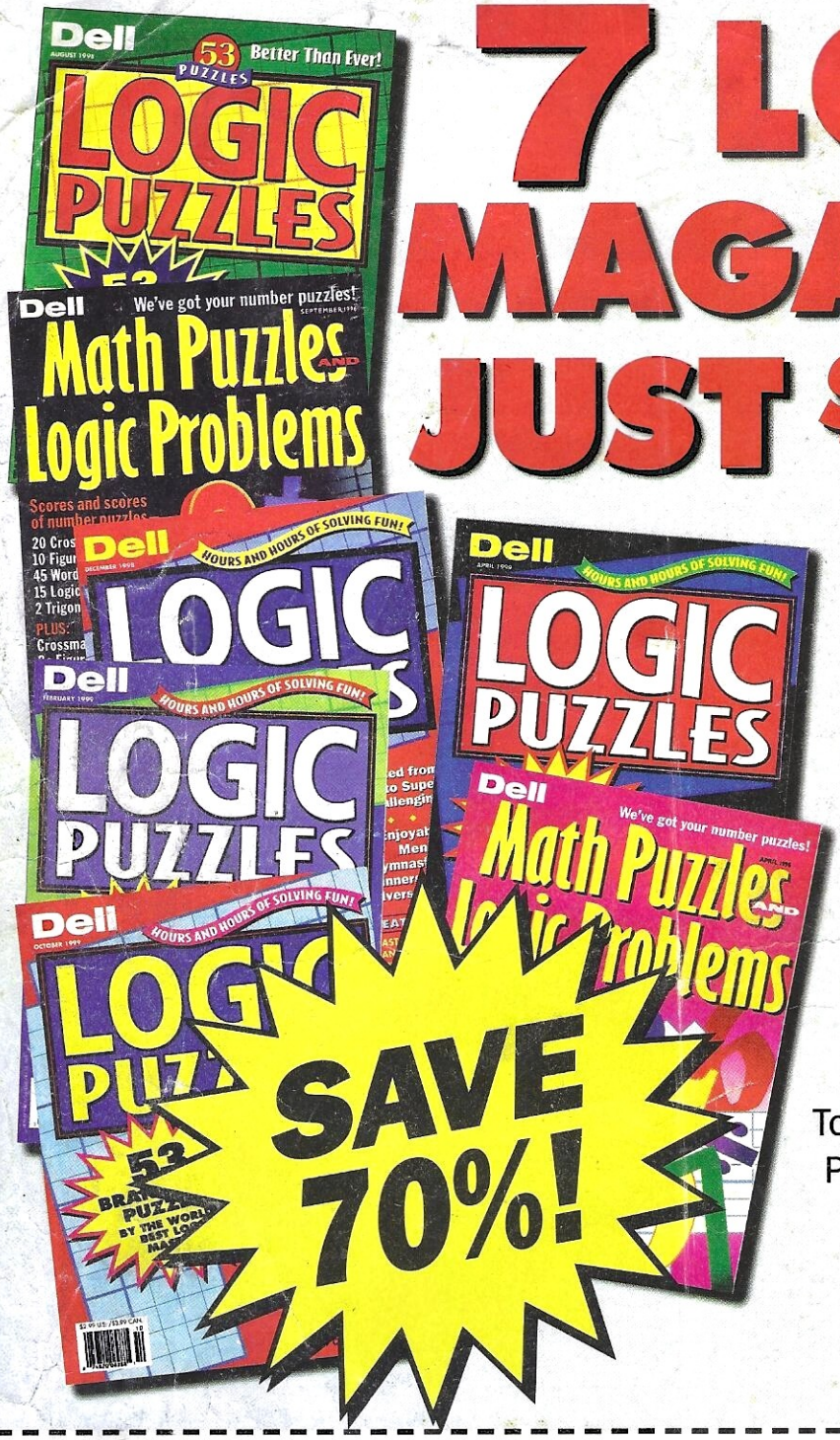

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